JUNE 1998
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Britain's Most Popular Int...ine

internet magazine

THE NEXT GENERATION ISSUE

Choose an ISP
Exclusive performance tests

Who's minding your baby?

The ideal home for your site

How to find a fast, secure and reliable Web host – whatever your budget

Page 38

CD FREE

Speed up the Net
We test the best Web accelerators

Your ticket to the top World Cup sites

Build a better Web site – hot tips from the experts

Exclusive!
Tim Berners-Lee fights for the Web

An Emap Ape Publication

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Pipex Dial	✔	x	x	£151.75	£151.75	£151.75
Virgin Net	x	✔	x	£122.45	£122.45	£122.45
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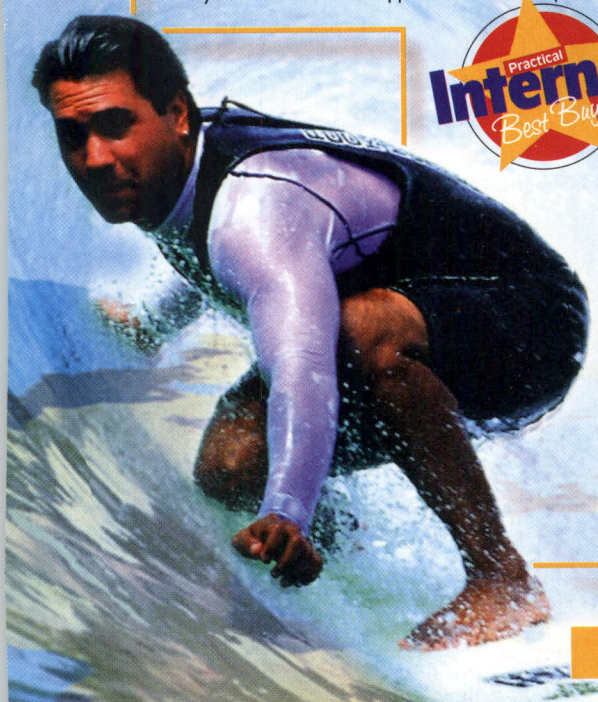

5 100% Local Call Access

ACROSS THE UK

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1p PER MINUTE CONNECTION

6 Everything You Need

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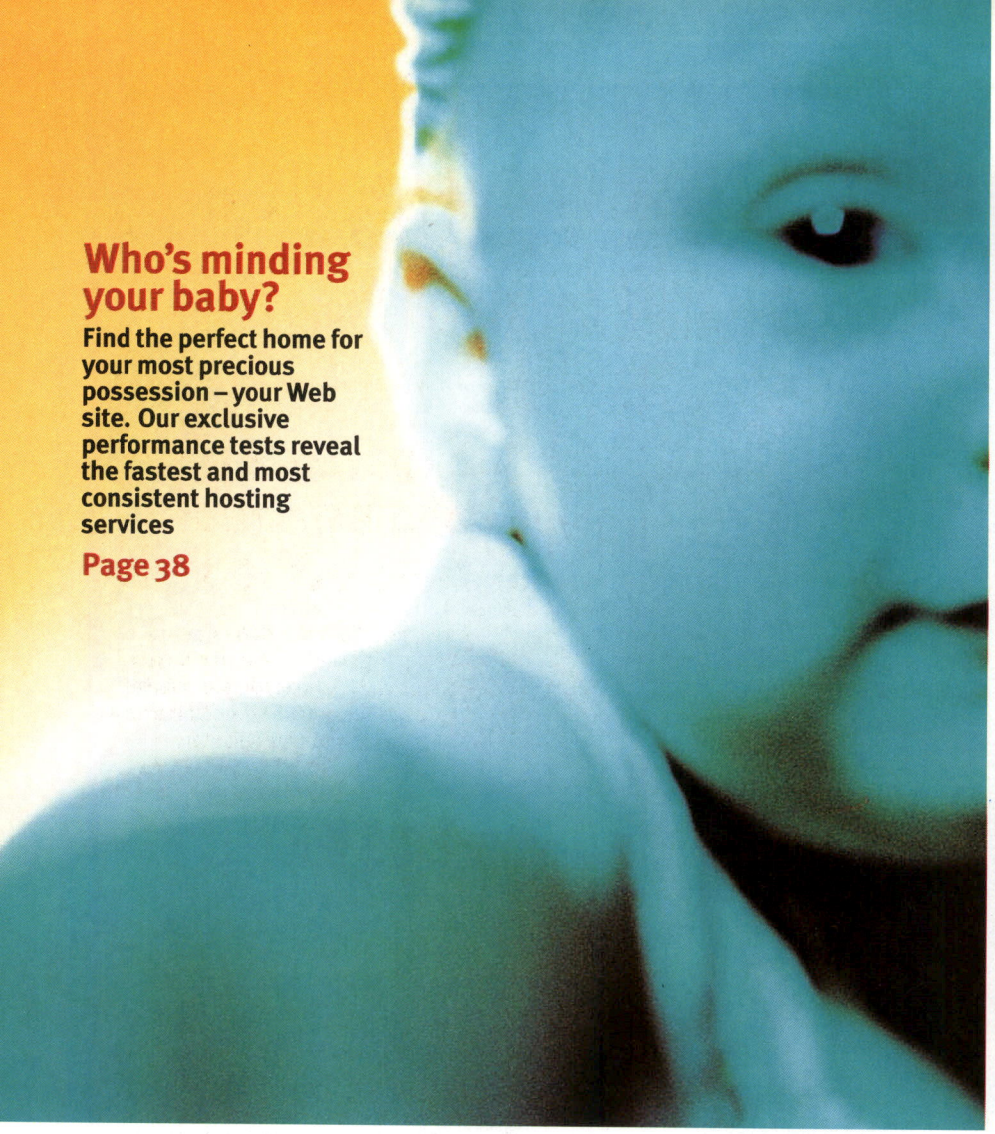

Who's minding your baby?

Find the perfect home for your most precious possession – your Web site. Our exclusive performance tests reveal the fastest and most consistent hosting services

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ON THE CD Great Web graphics

Our free cover CD brings you all the tools you need to create the best Web graphics. Plus 50 hours free with AOL

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Win, Win, Win

The chance to win a luxury weekend in Monaco with MSN. Answer a few simple questions and you could be on your way

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And there are cash prizes and mousemats up for grabs

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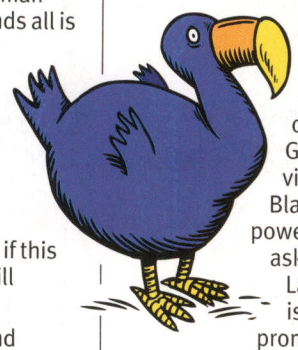
One year on from the overwhelming General Election victory that swept Tony Blair's New Labour into power, Bill Thompson asks whether the Labour Party really is fulfilling its promises to bring the Internet to the masses



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Online Magic has built an all-singing, all-dancing World Cup site

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Why did Private Eye team up with MSN, where do you go to eat in the capital and how do you get quick download times when you've got images on every page?

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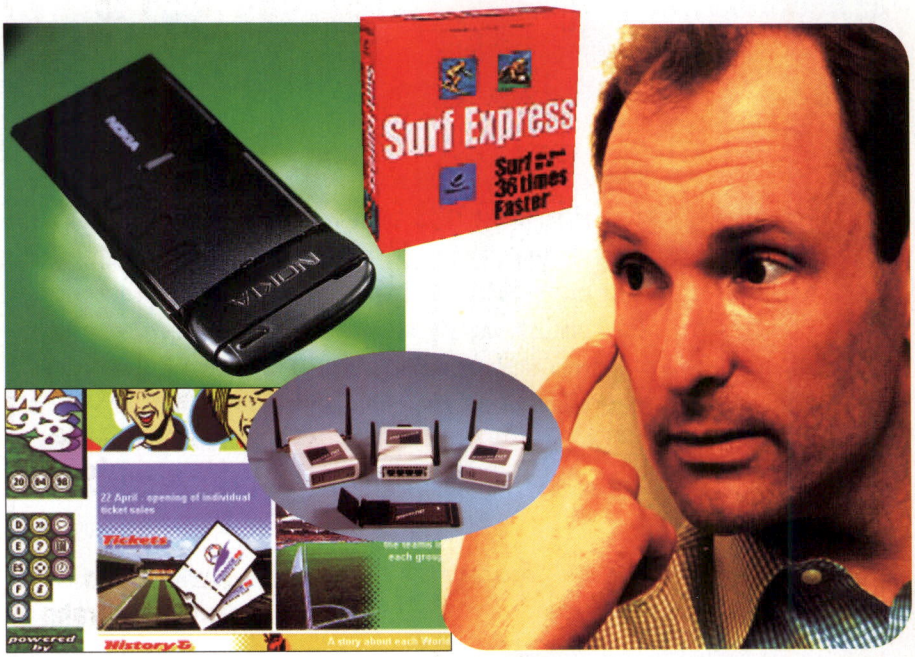

Tim Berners-Lee takes the logical approach to questioning in this month's interview, Surf Express joins other Web accelerators in the Labs, the multilingual WorldCup98 is this month's Site of the Month. Plus check out this month's Best Buys – Nokia's CardPhone and Breezecom's wireless Net solution

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An image compressor that lets you set bandwidth criteria

95 Webramp M3t
Give everybody in your office access to the Net through one magic box

96 Breezecom Pro series
Get on the Net without spaghetti trailing from the back of your machine

96 eSafe Protect
Protect your system with a personal firewall and keep out viruses

97 Nokia CardPhone
An all in one GSM mobile phone on a PC card. Perfect for data connections

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HTML editor for the old school

98 Fusion 3.0
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99 Pace NB56 Voice
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Web Pro 102

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140 ISP tests
102 providers are put through our rigorous performance tests

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The most comprehensive listing of the UK's Internet Service Providers

Nice rhetoric, shame about the policies

A year after Tony Blair's New Labour swept into power, the Internet rhetoric goes on and the policy details remain vague. And despite the eventual release of its plans to promote voluntary licensing of trusted third parties, the Labour Party has yet to take a clear direction on many Internet issues.

While Tony Blair's showmanship has never been in doubt – his recent online debut, a one-hour pedestrian interview with Sir David Frost, was a triumph of style over content – his ability to create a coherent Internet policy is still in doubt.

While we applaud the digital signature initiative and his commitment to the National Grid for Learning, Labour's encryption, e-commerce, privacy, freedom of information and broader EC Internet policies require detailed analysis, not sweeping gestures.

And how far will Mr Blair's cosying up to Bill Gates go? So, who better than Bill Thompson, the man who helped draft Labour's manifesto, to assess New Labour's first year online for us this month? (See page 56.)

Elsewhere this month, a new payment scheme for higher education Net access was announced, and passed without comment – another example of important issues being obscured by grand marketing campaigns. This change could eventually see students charged per download. We just hope it's not the first step towards a bit tax, the very antithesis of Mr Blair's inclusive vision for a digitally Cool Britannia.

While the endless spin continues, the disparity between policy and public performance is widening. New Labour should heed the lessons that were learnt by Net companies a long time ago. This medium is built by people who are open to ideas, is based on open standards and is thus open to commercial and educational gain for countries open enough to embrace it. Let's hope the Open Government initiative isn't derailed by unfounded fears from security and Government departments.

Mike Bracken
Deputy Editor
Internet Magazine

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ABC **Audited average monthly circulation: 53,056 (Jul–Dec 1997)**

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(Page 3 has everything you need)

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Using your CD

The interface for the CD is written in HTML which means you can open it up in any browser. Just open up your browser, select the File Open option, access your CD drive and then load up the file index.htm.

If you don't have a browser, fear not, we've thoughtfully included the latest versions of Netscape Communicator and Internet Explorer on the CD for Windows 3.x/95 and the Mac. You'll find them in the browsers section of the CD.

Disclaimer

Please note: manufacturers will not support demo software and you install these programs on your machine at your own risk. We have tested them for viruses and corruption and at time of shipping these all checked out fine.

Internet Magazine and EMAP Apex cannot be held responsible for any problems arising from their use, or for the failure of any programs to run correctly.

You'll find that most of the software on this CD is shareware. Shareware developers put in a lot of work for little return and you should register software you continue to use after the evaluation period. Charges for shareware are usually very modest and registration entitles you to customer support and free or cheap upgrades.

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your cover CD

This month's must-have software

They're new, they're feature-packed and you don't rack up your phone bill downloading 'em. You'll find an amazing collection of Web graphics creation and editing tools on this month's CD. Try out the excellent SPG Web Graphics suite and try your hand at image-editing with our exclusive photos – the Royal Photographic Society Digital Imaging Group has kindly donated a selection of shots, but they're for personal use only.

Bits'n'Pieces

BarclayCoin Electronic money (Win 95)
HiHelpIndexv2.3 Indexes sites (Win 95)
SW 2000 Countdown to the year 2000 (Win 95)
STD Decoder Database of UK and International phone codes (Win 95)
ICQ98a Excellent chat software (Win 95/NT 4)
ChatNet Simple chat client (Mac)
Kali Popular Web gaming engine (Mac)
Backgammon Play backgammon over the Web (Mac)
MacIRC IRC software (Mac)

Web utilities

WinZip Excellent archive file manager (Win 95/Win 3.x)
RegClean Cleans up the mess left by Win 95 (Win 95)
ClipHoundv1a Clipboard booster (Win 95)
PFT Internet Timerv2.3 Select how long you want to be connected per session (Win 95)
ConnectPalProv4 Redials failed connections (Win 95)
Interlog Calculates your phone bill (Win 95)
ModemSpy Give everybody a call log book (Win 95)
NetTimerProv Supports multiple ISPs (Win 95)
Internet Timer Program Tracks phone usage (Win 95)
VETv9.6x Anti-virus software (Win 95)
FileHound Looks after your downloads (Win 95)
Catch-UP Scanner Software updating service (Win 3.x/Win 95)
FPArchie Looks for files for you (Win 95)
Net.Medic Net activity monitoring util (Win 95 / NT 4)
Internet Neighborhood Browse FTP sites in Windows Explorer (Win95/NT)
DirectX Latest version of multimedia extensions for Windows (Win 95)
Vbrun5 Runtime libraries for Windows (Win 95)
Download Deputy Batch downloads (Mac)
Insider Updates Automatic updates from Web (Mac)
Fetch File retriever (Mac)
Netscape Defrost Stops Navigator seizing up (Mac)
FTP Client Transfer files easily (Mac)
Anarchie Popular Mac FTP tool (Mac)
MacTCP updater Update your version of TCP (Mac)

Web Editors

Frontier Web development tool (Win 95/NT 4)
ThingMaker Create interactive site content (Win 95/NT)
Elated Web Kits Fabulous collection of graphics and templates (Win 95)
Alma Page Generator Database-to-HTML utility (Win 95)
Web Hotspots Create imagemaps simply and quickly (Win 95)
MapEdit Imagemap editor (Win 95/Mac)
HomeSite Easy to use HTML authoring package (Win 95)
AceExpert Help building Java applets (Win 95)
Myrmidon Turns a Mac file into a Web page with one click (Mac)
WebWeaver Popular Mac HTML editor (Mac)
BBEdit Classic Mac HTML editor (Mac)
BigBrother Checks your links (Mac)

Email

Calypso Top-notch email application (Win 95/NT)
SmartMail British-built email system (Win 95/NT)
Eudora Light Popular email package (Win 95/Win 3.x)
Mailstrom Mac email handler (Mac)

Graphics software

SPG Web Graphics Suite Brilliant image editing tools (Win 95)
Cool 3D Make 3D text and animate it (Win 95)
PaintShop Pro Excellent graphics editor (Win 95/Win 3.x)
Photonyx Powerful way to manage imaging projects (Win 95)
WebRazor Suite of graphics utilities (Win 95/NT)
GraFX Image editing software (Win 95)
GIF Animation Builder Makes light work of GIF animations (Win 95)
Dark Tree Textures Fascinating texture maker (Win 95)
ThumbsPlus Image management and viewing software (Win 95/Win 3.x)
Colorize Colours up black and white images (Win 95/NT/Mac)
Virtus 4 Create 3D models and worlds (Win 95)
Infini-D Top 3D graphics application (Win 95/Mac)
Xara Webster Simple image editor (Win 95/NT4)
Xara 3D Simple graphics program (Win95)
HVS JPEG Plug-in for your paint program (Win 95/NT/Mac)
JPEG Optimiser JPEG image compresser (Win95 / NT 4)
Jiffy Pix Create Web graphics quickly (Win 95/3.x)
IrfanView Graphic file viewer and converter (Win 95)
PhotoImpact Smart Saver Optimise your images (Mac)
WildRiver Suite of Photoshop-compatible filters (Mac)
DeBabelizer Graphics file converter (Mac)
BladePro Photoshop plug-in to build 3D images (Mac)
ImageVice File squasher (Mac)
PhotoGIF Plug-in for Photoshop (Mac)
GIF Prep Squashes GIFs down to size (Mac)
Graphics Converter Handles lots of file formats (Mac)
HVS ColorGIF Make your GIF images perform better on the Web (Mac)
GifBuilder Create animated GIFs (Mac)
GIFmation Excellent GIF animation creator (Mac)

Multimedia tools

Apple QuickTime Latest version of multimedia software (Win 95/NT4/Mac)
RealPlayer 5 Real-time live audio and video player (Win 95/NT)
Authorware Develop interactive multimedia courseware (Win 95)
GoldWave Sound editor (Win 95/NT 3.51)
SSEYO Koan MIDI on the Web (Win 95)
D-SoundPRO Audio editing software (Mac)
SoundEffects Recording, editing and conversion software (Mac)

Browsing

Netscape Communicator 4.05 Updated browser (Win x.3/95/Mac}
Mozilla source code One for the developers
The Lycos browser Let Lycos guide you around the Internet (Win 95)
Internet Explorer Microsoft's all-singing, all-dancing browser (Win 95/3.X/Mac)
Internet Explorer Power Tools Add-ons for IE 4 (Win 95)
CatchTheWeb Grab and archive Web pages (Win 95/NT)
InterMute Cut out all the Web clutter (Win 95/NT)
Surf Express Top Web accelerator (Win 95/Mac)
NetSonic Web accelerator (Win 95)
PeakJet Reasonable Net accelerator (Win 95/Mac)
WebWhacker One of the first Web accelerators (Win 95)
WebTurbo Supercharge your Web browsing (Win 95)
WebEarly Guesses what's coming next (Win 95)
Unmozify Manages your cache (Win 95)
WebDevil Download Web pages quickly (Mac)
Web Retriever Saves text and graphics from sites (Mac)
NetJumper Load up links from any Web page (Mac)

Web Site listings

Those of you who haven't had enough of the World Cup yet can follow this set of links to more World Cup 98 sites than you can shake a stick at. See our review of the top sites on page 67.

It's *fast* Internet because it's *BT Internet*

As a major Internet Service Provider, BT Internet (supporting K56 flex™ and X2™)*, offers fast and reliable connections with excellent network capacity.

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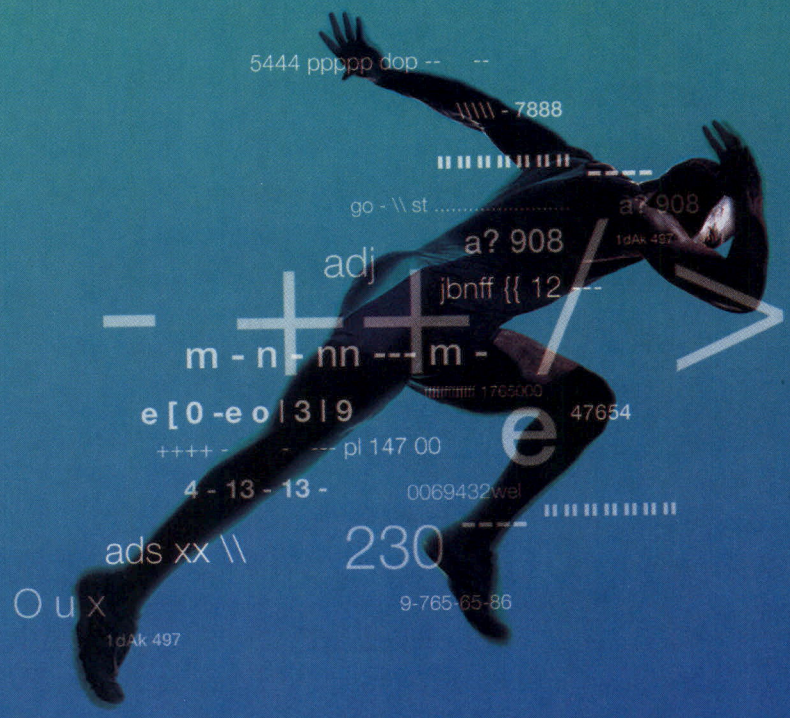

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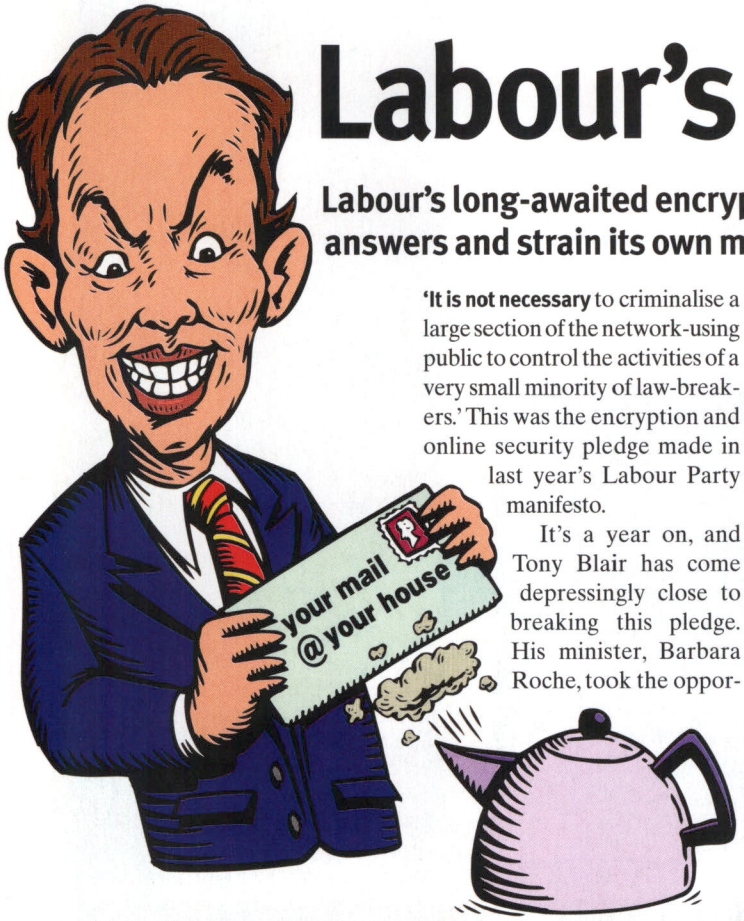


Labour's crypto fudge

Labour's long-awaited encryption proposals raise more questions than answers and strain its own manifesto claims

'It is not necessary to criminalise a large section of the network-using public to control the activities of a very small minority of law-breakers.' This was the encryption and online security pledge made in last year's Labour Party manifesto.

It's a year on, and Tony Blair has come depressingly close to breaking this pledge. His minister, Barbara Roche, took the opportunity to outline encryption policies in an answer to a tabled question on electronic commerce in the Commons. The Government issued its proposals in the quietest manner possible. As Bill Thompson, who assisted Labour in preparing much of its technology manifesto, pointed out: "this was snuck out on a wet Monday afternoon."

The reply to the question revealed key elements of the government's plans, including:

- Voluntary licensing arrangements for bodies offering cryptographic services to the public.
- Introducing legislation making provision for law enforcement agencies to get legal access, with a properly authorised warrant and on a case-by-case basis, to encryption keys.
- Legal recognition of digital signatures.
- The DTI is also introducing an Accreditation Scheme to assess businesses' compliance to BS7799, the national standard on information security.

As part of the announcement, the Government released the findings of the consultation process that has dragged on since the initial DTI proposals early last year. These make for interesting reading. One conclusion reads: 'The proposals would bring cost and complexity to law-abiding users while not necessarily achieving the results the law enforcement authorities want.' You don't say.

The reaction to the announcement has been typically forceful. First up, crypto expert Ross Anderson: "By imposing on UK business a regulatory burden that is absent elsewhere, they'll give competitive advantage to other countries. The policy doesn't tackle the problem that large numbers of consumer and industrial products now incorporate cryptography; these range from cash machines and point of sale terminals through electricity meters, road toll tags, mobile phones, and pay per view set-top boxes to burglar alarms."

Gus Hosein from privacy.org commented: "What still remains, after all this time, after all this work, and after all this waiting, is more questions, and more uncertainty." Strangely, no one from the DTI was available for comment.

www.labour.org.uk/views/info%2Dhighway/content.html
http://jya.com/uk-ecomm.htm

ACCESS

Net outage hat-trick

Three wholly avoidable outages damage the Net's credibility as a robust communications channel

The Net may have been designed to withstand a nuclear war, as common folklore would have it, but it certainly isn't robust enough to withstand the might of knucklehead techno-companies.

First up is AT&T, its frame relay network collapsed in mid-April. Courageously, AT&T stopped billing customers until the service was restored, and then, somewhat less courageously, pointed a finger at dodgy routers from suppliers Cisco.

Then it was the UK's turn, when London Internet eXchange (LINX) home TeleHouse suffered 'intermittent routing problems.' The upshot was limited access to the Net for many of the 40 UK ISPs resident at LINX. LINX boss Keith Mitchell claimed it was an error by TeleHouse maintenance engineers who accidentally hit the emergency power off button.

Our favourite access disaster comes from Network Solutions. The omnipotent domain name outfit saw fit to remove the Ripe.net domain (RIPE is the body that assigns IP addresses) which, all things considered, wasn't the brightest move. Soon, a lot of European ISPs noticed that their routing information was missing, cutting off their users from large areas of the Net.

www.netsol.com
And these people run the top-level domains!
www.linx.org.uk
Don't touch that...too late.
www.telehouse.com
They're just hosts, we can't control them

OVERHEARD THIS MONTH...

WE TAKE A FEW CHOICE QUOTES FROM THE SEVENTH ANNUAL WEB CONFERENCE IN BRISBANE

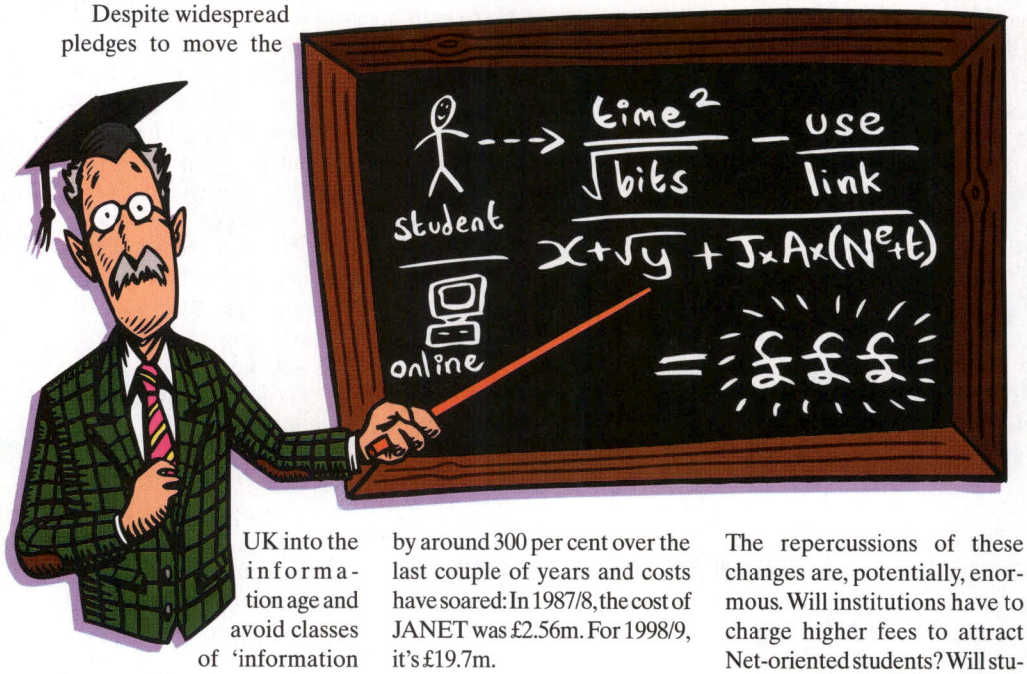
"The engines of the future pick up interesting facts, and the logic engines analyse the data. A global reasoning engine running on the Web could be very interesting, and make people a fast buck.'
Tim Berners-Lee, showing a rare bit of commercial insight.

New Net Costs: 2p per Mb?

A shake-up in the academic Net pricing model paves the way for the pay per byte model in the UK

Students and teachers in the UK, are to pay directly for their transatlantic Net traffic from 1 August onwards, bringing the threat of a 'bit tax' ever closer.

Despite widespread pledges to move the UK into the information age and avoid classes of 'information haves and have-nots,' the new charging model for UK academia is the thin end of the wedge. While those involved claim the pricing change is merely a new procedure, the upshot is that institutions, and by extension students, who need high capacity bandwidth, will pay more for the privilege.



How funding works

Currently, the funding bodies for each country in the UK pay into the JISC, the Joint Information Systems Committee. The JISC determines a networking policy for UK higher education, and this policy is implemented by the UKERNA (the United Kingdom Education and Research Networking Association). The UKERNA runs JANET (the Joint Academic Network).

Until recently, the JISC funding went into a central pool, but the JISC claims this situation just isn't manageable. International traffic on JANET has increased by around 300 per cent over the last couple of years and costs have soared: In 1987/8, the cost of JANET was £2.56m. For 1998/9, it's £19.7m.

The changes to funding

Now the JISC and its funding bodies believe there should be an 'incentive to the end users to apply economies in [JANET's] use.' Or, put simply, institutions who use the Net should pay per megabyte.

So, from August this year, the JISC hopes to recoup £2m, or 80 per cent of its budget for expanding transatlantic bandwidth, directly from the institutions. The net result (sorry!) of this is that it'll cost most institutions 2p per Mb, inclusive of VAT, to receive incoming Net traffic that uses JANET's transatlantic gateway.

The JISC expects that institutions will pay an average of £15,000 per year, with over 20 paying twice that. There will, however, be a low rate for off-peak hours, and some further education bodies will not have to pay.

The repercussions of these changes are, potentially, enormous. Will institutions have to charge higher fees to attract Net-oriented students? Will students be billed as they learn over the Net? How will unsolicited spam affect bills? Will UK academia fall even further behind the US as Internet2, a fast academic network, develops on the other side of the Atlantic? As the traffic is only charged for transatlantic delivery, will we see universities adopting a UK download-only policy?

Institutions are already looking to save money by adopting proxy and caching agreements allowing content which has been downloaded – and paid for – by one institution, to be accessed by others for free.

www.ja.net
SuperJANET to the rescue!
www.ukerna.ac.uk
We build it, students just abuse it.
www.jisc.ac.uk You want *how* much to get online?

Beta bulletin

Overawed by our stinging coverage last month, toy company **Prema** hands **www.pokey.org** back to Chris Van Allen...**EMAP** winds up online sales business, boss quits for **Carlton www.internet-sales.com**

...**Sun Microsystems** kit stolen from **ICA** media center – journalists query generous 'loan' policy...**MSN** closes Irish service and hands over around 10,000 customers to Ireland Online...**BBC Education** launches **Web Expert** service, more education services to follow... **www.bbc.co.uk /education**...**Tony Blair** hosts live Net debate with hard-hitting **Sir David Frost**, claiming to be first Euro nation chief to venture online... Amazingly, William Hague gives exclusive online interview to AOL the very next day...**Legend Internet** claims denial of service hack attack affects *Internet Magazine* service provider performance ratings...US radio journo arrested on child porn charges, claims 'research' as excuse...**Intelliseek's Bullseye**, a new search engine to solve Net navigation problems, *only* a 6.5Mb download... **MTV** signs up with **DoubleClick**, expect same three ads to be played in rotation for months on end...Futurologist **Paul Saffo** predicts **Jim Barksdale** 'not long for **Netscape**'. Well, if anyone knows... **Internet Network Services** (**www.ins.co.uk**), shells out for its own dedicated links to Stockholm, Frankfurt and Amsterdam...US advert for **Microsoft Internet Explorer** features Mozart's Requiem track – the 'where do you want to go today' message is

accompanied by the Latin lyrics 'the damned and accursed are convicted to the flames of hell'. Janet Reno ruled out of enquiries...**Microsoft** travel and reservation service **Expedia** set for a European launche mid-summer, presumably to coincide with end of summer holiday booking season...**Amazon.com** buys up **Bookpages** and **Internet Movie Database** for £55m. Simon Murdoch, Bookpages MD, claims that book prices will fall and the Bookpages name will continue for some time. He also claims that "we'd love to have **SET**." Him and us both.
www.bookpages.co.uk

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Isle of Man IM99 1GQ
*equivalent to £8+vat monthly

OVERHEARD THIS MONTH...
"We see the key role in the European Union as the role of the private sector." **Frans De Bruine, director of the EC's Information Market Policies,** proving that Brussels does not equate with bureauracracy.

Guardian goes for Unlimited growth

Soccer and cricket lead the way for niche sites

The long expected niche sites from the Guardian and Observer group will be released this summer under the 'Unlimited' brand name.

The half-dozen sites – including ones devoted to politics, news and film – will include work by design pioneers Neville Brody and Roger Black. Each site will carry the Unlimited moniker – Film Unlimited, News Unlimited and so on.

The technical development of the site is being managed by the Web design company Online Magic, which is temporarily playing host to the Guardian New Media Lab's designers.

The Guardian has already developed football and cricket sites, and is looking out for content partners to further expand its sport content following the World Cup.

And on the subject of footie, The Daily Mail's Soccernet has launched a World Cup special site that will feature real-time animated representations of every World Cup game.

www.guardian.co.uk Anyone for 'Aitken Unlimited' and 'Fakefax Unlimited'
http://worldcup.soccernet.com We await those 'plucky Scots exit at hands of Iran/Jamaica/South Korea' headlines

BROWSERS

Mozilla bites back

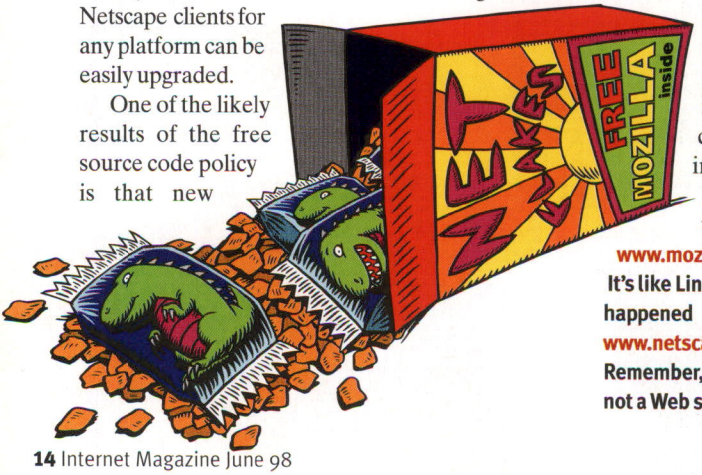
Can free source code and a move towards mainstream media content revive Netscape?

Giving away its free source code, with conditions, seems to be giving browser behemoth Netscape a much-needed kiss of life.

Within hours of its release on the Net, Australian hackers had re-installed the 128Kb security algorithm that had been removed under US crypto exportation rules. The company, Fortify.Net, claims that Netscape clients for any platform can be easily upgraded.

One of the likely results of the free source code policy is that new versions of Communicator will be smaller. However, there'll be one definite addition to the new client – PICS support. Netscape was notable by its absence in not supporting PICS – the Platform for Internet Content Rating System – when the standard was ratified by the W3C, and many feel that its presence in previous versions of Navigator and Communicator would have given the ratings initiative a practical kickstart.

Netscape must be grateful for the traffic coming to is site to download the free code as the company attempts to reposition its home page as a 'portal' to the Net. This sounds a lot like Microsoft's Start policy ominously similar to the and could bring Netscape into direct competition with many of its current allies, including the leading directory services.



www.mozilla.org It's like Linux never happened
www.netscape.com Remember, it's a 'portal' not a Web site

With Friends Like These...

The site: **www.moral-defense.org/**
The sponsor: **Capitalism.org**

The story:

Under fire from the DoJ, the Java lobby and every hard-up loser jealous of your common or garden multibillionaire, Microsoft last month hit on a cunning plan. Mount a 'spontaneous' positive-spin campaign, purporting to come from journalists, industry figures, leading thinkers and politicians. The campaign, aimed specifically at politicians, set out to create a groundswell of support for Microsoft.

Committee for the Moral Defense of Microsoft

Although regional PR firms were briefed and writers lined-up before the rug was pulled by a leaked story in the *Los Angeles Times*, things suddenly went from bad to worse for Bill and co when would-be President Bob Dole joined the Project to Promote Competition and Innovation in the Digital Age, or ProComp, a campaign to lobby against Microsoft's perceived anti-trust violations.

But all is not lost. In the face of a relentless onslaught of opposition, you can always count on those krrr-azzeee guys at Capitalism.org to jump to your defence. Hence the 'Committee for the Moral Defense of Microsoft.' Leaning heavily on the thinking of free-market guru Ayn Rand, who pioneered Objectivism (translates as: just let businessmen get on with it), this site is one long homage to the Chicago school of free market economic theory.

take action by clicking here now!
http://www.capitalism.org/microsoft

Now, we're a pretty apolitical lot here at *Internet Magazine*, but there are some classic phrases on the site that we just couldn't ignore.

1 **'Consumers need protection from coercive and omnipotent governments – not from the beneficial products that Microsoft and other companies provide via freedom of competition in a free market.' Will that be the same free market that compelled PC manufacturers to bundle IE with Windows?**

2 **'Who is on the side of Microsoft? There is Microsoft itself...and us.' My, Bill *must* be grateful the cavalry showed up.**

3 **Go to the bottom of the site. See that button that says 'Best Viewed with Internet Explorer.' That should say, 'Best viewed with any browser, to keep the Web visible to anyone who follows the W3C standards, and to keep this whole ball rolling for all of us, not just users of one particular browser.'**

4 **And our personal favourite – 'Robert Tracinski [the site instigator] has established a tax-exempt US-based non-profit organization to allow you to deduct a part of your donations. If you would like to donate funds to support this effort, please make checks out to Committee for the Moral Defense of Microsoft and mail them to...'**

So there you have it. You can send money to a group of hardcore free-market economics devotees in order to stop democratically elected officials from using their constitutionally mandated legal process to investigate claims of monopoly and anti-trust violation. And with Bill's personal wealth at a paltry $53bn or so, we can just see you rushing for your chequebook.

Next month: It's those radical TechnoRealists!

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World Wide Web 7: The sequel

What will the Web look like one year from now?

Once upon a time, big time Web conferences used to be held in draughty halls, where academics and hard-core Unicode hackers would drift around and talk about the paucity of government resources for their projects. Then the Web went mainstream.

So, now the good times are rollin', and it was off to Brisbane last month for the seventh annual World Wide Web conference. This year, it was about keeping Web standards process going while pacifying the 250-odd members who pay for the annual shindig. So, if you want enough detail to bluff your way through dinner party Net conversation until next year's business card-fest in Toronto, here goes...

■ **RDF (Resource Description Format):** Expect the Dublin Core agreement to be enacted on, making the Web addressable and, therefore, searchable. Expect lots of talk about XML, but you'll only see it in version 6 of the browsers.

■ **P3P:** The W3C's campaign to bring all ratings and privacy standard setters under one umbrella will work. Primarily because if it doesn't, the more reationary governments (including some in Europe) will try to bring in draconian legislation.

■ **Speech interfaces:** These will happen – quicker than you can say Lernout and Hauspie.

■ **Multimedia: The** SMIL (Synchronised Multimedia Integration Language) will make programming combined audio, video and text fields easy.

■ **The W3C** will spend more time advising governments than setting new standards – and encryption is going to cause a horrible fight. Again!

■ **XML:** Microsoft will largely drive the development of XML, so expect a load of marketing hoopla about Microsoft's style add-ons.

■ **True** to the W3C's academic roots, there will be much more development of international university library systems and access for disabled groups.

■ **Oh,** and e-commerce will take off. As if you didn't know.

For more details check out www7.conf.au

W3C

Standards Watch: June 98

The World Wide Web Consortium (www.w3.org) has, as usual, been busy "advancing its mission to lead the Web to its full potential." Well that's what its press department told us.

Dave Raggett: HTML pioneer and MathML creator

The W3C doesn't make standards, it issues 'recommendations' which the industry tends to adopt (unless they think they can get away with their own proprietary stuff).

After finalising the specification for the Extensible Markup Language (XML), the first XML application has now been approved. MathML is the Mathematical Markup Language and solves one of the biggest problems for mathematicians and scientists using the Web – how to show equations. Apart from some simple mathematical symbols, anyone wanting to put maths on their Web site, had to lay it out using an editor and save the symbols as image files. Using a MathML-aware editor and browser, this is no longer necessary.

Also at the W3C, the Synchronized Multimedia Integration Language (SMIL) specification is about to be issued as a 'recommendation'. SMIL is XML-based too, but instead of maths it lets developers write 'TV-style' multimedia presentations where audio, video and still text/images can be integrated in a Web page with timing/sequencing information. SMIL is just an extension to HTML and should let developers build multimedia pages that are far more compact than those using ShockWave or even Flash.

Time Line

BLAIR

The Labour Government has made much of its dedication to all things digital, and this month we should finally see the publication of the 'Better Government' policy white paper. Delayed from April, presumably so they could actually come up with some ideas, the main focus will be on, errm, electronic government. Check **www.open.gov.uk,** or just read the soporific reporting in any national broadsheet.

NEW

The first bits of the $500m US Internet2 plan to advance Internet-based applications and services (**www.internet2.edu**) are going live, with the deployment in June of the backbone for the Corporation for Education Network Initiatives in California's gigabit network, CalREN-2 (**www.ucop.edu/irc/projects/CENIC/**). This will link a dozen US universities and will eventually form part of a high-speed academic network. Anyone remember SuperJANET?

CRYPTO

If you're a crypto geek, then 15 June is the last day for you to get your entry in to the US Government for its competition to replace the 20 year

WinGate 2.0 is a powerful Proxy/Firewall server, which can allow your entire network to share a single Internet connection (Modem, ISDN, leased line, etc.) with nearly any type of client running TCP/IP.

WinGate Pro also includes the ability to limit the access the users have to the Internet, Logging and Auditing, SOCKS5 and HTTP caching.

WinGate 2.0 runs as a service under both Windows NT and Windows 95. This means that WinGate starts when Windows is run... no user needs to be logged in.

WinGate 2.0
Licenses are issued in Lite or Pro versions, for 2, 5, 10 or Unlimited users.

Also available

MDaemon is an inexpensive but powerful mail system that will allow users on a LAN to email one another and users on the Internet.

MDaemon licenses are issued for 5, 25, 50 and 5000 mailboxes.

For further information on WinGate 2.0, MDaemon, Free Downloads, Trial Keys and UK availability, call

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One internet connection for an entire network!

OVERHEARD THIS MONTH...
"We'll keep our hands off the encryption debate. We have too much to lose." **W3C marketing manager for Europe, Josef Dietl**, showing that stand-up-and-be-counted Web libertarianism isn't dead. But it's not very well.

Time Line

old DES encryption algorithm used as a standard to keep Government secrets secret. See **www.itl.nist.gov/lab/bulletns/9_97.htm**, and try not to laugh when they announce how 'secure' Government documents are.

FAILURE

The geeks will be in Napa, California for the IEEE's conference on network quality of service (see **www.computer.org** for the programme). The big question, as always, is whether people will pay for fast, reliable networks.

PANICS

Watch the skies – or Web anyway – for an online conference held by the G7 countries on the Millennium Bug. Set up by the US General Services Administration (**www.gsa.gov**), what are the chances we'll see a very important announcement by the end of the conference, followed by a new round of year 2000 mania.

MANCHESTER

No computers – no Internet. So the 50th anniversary celebrations of the first stored program computer deserve a mention here. Real-world celebrations kick off in Manchester on June 17 **www.computer50.org**

All expenses paid

This month's Net conferences, courses and seminars...

The Internet Explored

The last of these one day beginners' events will have you connected to the Internet, getting to grips with news groups, surfing the Web and turning your hand at creating your own Web pages. A mere £145 and you can even sign up online.
28 May
(0171) 282 1940
training@informed-ibs.com
www.informed-ibs.com/training/

Marketing on the Internet

How do you effectively use the Web to build your brand? There aren't many companies who can claim success in this field, but Waterstones, Virgin and Web designers AKQA will be amongst the first to turn a profit from their sites. They provide the case studies, so this two days might be money well spent. It will set you back £895.
2-3 June
The Washington Hotel
London
book@learning-in-business.com
(0181) 944 9030
www.learnbus.demon.co.uk

Value Added and Online Services in Eastern Europe

Most companies have one eye fixed on the happenings of the Eastern European market.

This conference and exhibition is a chance for a get together. Cost £925.
2-3 June
Kempinski Hotel, Budapest
(0171) 505 1027
www.asibsi.com

Hands on Internet Security

It might sound like a NATO exercise, but you will get the chance to find out which external security threats jeopardise your systems and to kit yourself out to protect your network. Cost £1,050.
2-4 June
(0171) 344 3900

Online Help Conference

Having trouble writing online help for your customers? This conference will be populated

by technical authors and programmers who write online help for apps, and large corporations using online help to deliver internal documents.
4-5 June
Olympia, London
(01844) 214 690
www.digitext.co.uk/conf98/

Voice on the Net Europe 98

Jeff Pulver has an eclectic mix of speakers for this high-end four day conference – 83 in 36 sessions. And all in Norway. Phew!
8-11 June
Radisson SAS Plaza Hotel
Oslo
www.pulver.com/euro98

Creating Web Pages

Informed Business Systems is running basic and advanced courses on building Web pages. You can take them separately or consecutively and Informed Business Systems promises that in a mere two days, you'll be up to speed on tables, HTML tags, CGI and animated graphics. Cost £195 for one course.
Creating Web Pages – Basic
8 and 22 June
Creating Web Pages – Advanced
9 and 23 June
Old Street
London
training@informed-ibs.com
(0171) 282 1940
www.informed-ibs.com/training/

Managing the Information Revolution

24-26 June
Hotel Bayerischer Hof, Munich
hensonschnee@msn.com
(33) 1 30 53 67 97
www.ephmra.org

NetMedia 98

Find out what's really happening in the burgeoning world of interactive digital media with this course. Day one includes keynotes from Merrill Brown, editor in chief for MSNBC, who will be speaking on how to build a digital media company. Meanwhile, day two thrills with Alan Rusbridger editor of *The Guardian* on 'Journalists and the Internet – how they use it and what do they think of it.'

The cost is £195, although there's a 15 per cent discount for freelancers and a massive 10 per cent off for members of the NUJ.
2-3 July
City University, Northampton Square, London
(0171) 477 8037
www.soi.city.ac.uk/netmedia

Bug of the Month – June

This month there's been the usual list of bugs in Net software. On the server side, the big Unix problem relates to the DNS server, BIND (the Berkeley Internet Name Daemon). There are two neat denial of service attacks that can make your site (and Web server) disappear from view, and one that gives an intruder root access to your system. See **www.cert.org** for patches.

It seems most people are waiting to see what Windows NT 5.0 has to offer so we can't tell which of our favourite security problems will make it through unscathed. We reckon Windows 95 compatibility is likely to remain a main hole. NTBugTraq (**www.ntbugtraq.com**) is a good place to start if you want to make sure your system is secure.

On the client side, Chris Evans in Oxford has found some worrying problems in the Quake I client, with at least three potential buffer overflows. Once someone can overwrite a buffer in a program, the potential then exists for them to run any code they like on your computer.

If you want to know all about it then the Tao of Windows Buffer Overflow (**http://204.57.138.9/cDc_files/cDc-351/**) is the place to go.

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- Domain name registration or transfer

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- Domain name registration or transfer
- Webspace options
- All network packages include a fully configured and tested router

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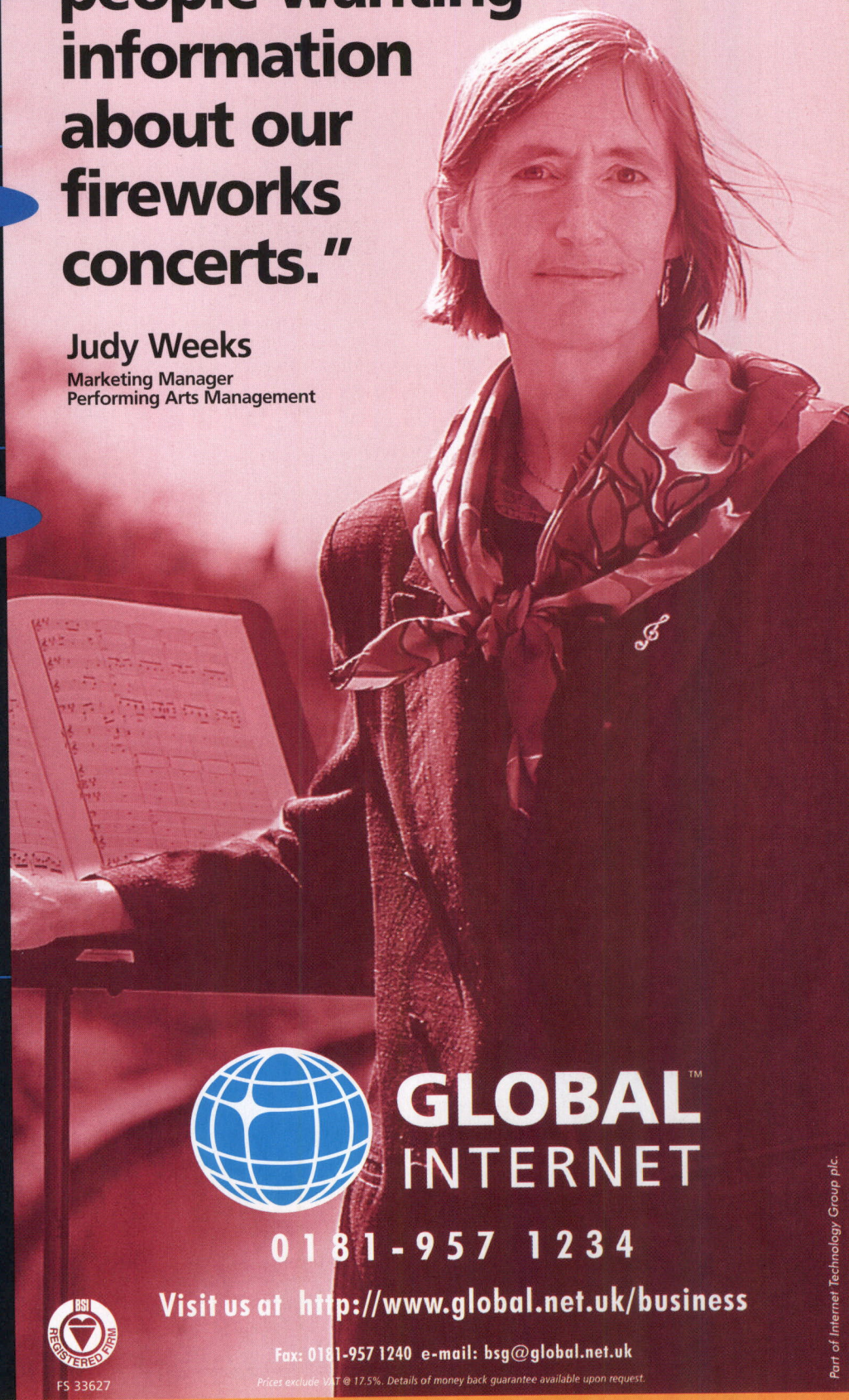

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Mr Logic

Tim Berners-Lee, Director of the World Wide Web Consortium

Touted as the creator of the Web, Tim Berners-Lee is surprisingly neither rich nor outspoken. An unashamed iconoclast, he's devoted to the World Wide Web Consortium's mission to maintain Web standards. Yet the Web's first pin-up boy is feeling the strain. Mike Bracken reports

You've already read this interview. Logic dictates it. There's only one Tim Berners-Lee interview.

It's the interview that begins: Tim Berners-Lee, the man who 'invented' the Web. The reluctant, brilliant scientist who eschewed fame and fortune to protect his invention. The battling Brit who was shafted by Netscape and then overshadowed by Gates. The Web's first philanthropist and its guardian. The all-powerful purveyor of logic. Tim Berners-Lee is the Web. He is its creator and as such is logic personified.

As an Internet professional, you know this. It's logical. Yet our Tim Berners-Lee interview is not like the archetypal TBL interview. It's been hijacked by impossible, illogical questions. And Tim is not happy.

Preaching to the converted at the Seventh World Wide Web Conference in Brisbane, TBL is in typical logic mode. His keynote speech to the Web's hardcore developers is maddeningly logical. There's no call to arms to protect the Web from the venal army of commercial software companies, many of whom wish to see their proprietary software overtake the W3C's carefully crafted standards. There's no phlegmatic reflection on what could have been, no 'big picture' vision. Instead we're treated to a rambling, but entirely logical reflection on the merits of machine-readable information versus human-readable data on the Web. As academic overviews go, this is straightforward, logically so. As rousing visionary statements go, it's incoherent babble. But that's Tim, logical to the last.

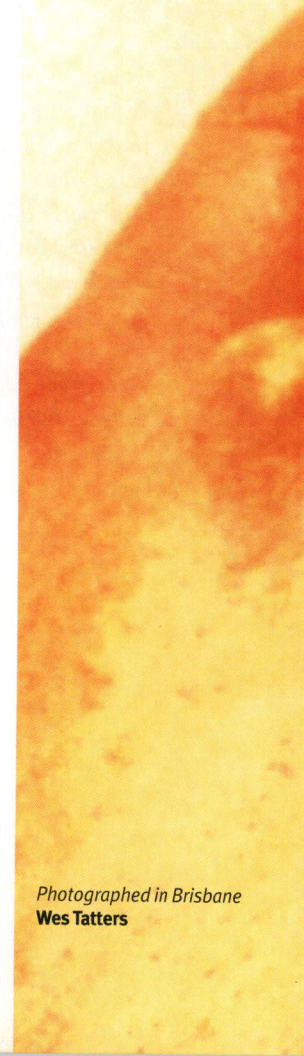
The development of the Web was predetermined. Pioneers like Ted Nelson had already developed much of the hypertext needed, the academic sponsored infrastructure, the cables and routers, had been in place for decades. As the Cold War collapsed and co-operation between multinational organisations grew, the demand for a simple and workable document sharing model grew. At one of these organisations, the work of hundreds of scientists from the world over lay unused, without an ordering or indexing system. Appalled, Berners-Lee ported the hypertext and the Enquire model to the Net. The rest is history.

That the Web community would develop and extend this basic model was predetermined. There were enough like minded people who 'got it' to ensure that the basic HTTP and HTML standards would grow.

For TBL, though, this was no time to step down. The standards were invented to work globally, and they had to scale logically. Berners-Lee worked for two years to drive the standards, but the cracks had already started to appear. First up, a young team of programmers in Illinois proposed, among other things, adding an image tag to the HTML standard, thus initiating a drive towards multimedia and consumerism. TBL thought his work too serious and important for that, but the team of young programmers went their own way. Netscape was born, and the logical development of the Net was threatened. Netscape-only tags, such as layers, started to appear, and the foundations of Web standards started to crumble.

At the same time, governments were getting in on the act. The Net was the new Wild West, they claimed, and it needed policing. The demand for a globally identifiable standards body was obvious, so it was logical that Berners-Lee should direct it.

In October 94, the W3C was founded, with one important caveat: vendor neutrality. Berners-Lee, as its head, was placed in an unusual position. He had to shepherd the development of his invention, but could not comment



Photographed in Brisbane
Wes Tatters

on the W3C members who did anything to threaten that development.

And this is why he's unhappy. Questioned about the Netscape/Microsoft split, he becomes angry. The vendor neutrality issue has him gagged, so he refuses to talk about such issues. Indeed, he refuses to talk on several subjects, politics and family included.

This is why there's only one Tim Berners-Lee interview. He is the WYSIWYG interviewee. A fanatic about the Web, he throws his arms around manically when talking, ten to the dozen, about technical development. Yet this enthusiasm gives him away. There's much talk of 'schemata' and 'logic,' of 'evolvability'. For better or worse, he remains an academic. Asking him if he's jealous of those who've made millions on the Net is pointless – the commercial world is simply not in his make-up.

Only history knows whether this approach will succeed. Already the W3C, an extension of Berners-Lee, acknowledges that the political and social implications of the Net need attention, and with PICS ratings and now e-commerce, the signs that the harsh realities of life are creeping in are undeniable.

While Berners-Lee fiercely rejects claims that the W3C will have to take political stances and lobby governments, other senior W3C members are not so sure. The threat is no longer technical but social. Encryption, regulation, privacy, commerce, taxation and a host of other issues need political fixes, not just technical standards. The question is: can Berners-Lee and the W3C answer these needs. A bright but bumbling physics graduate with no penchant for public speaking and little time for anything other than technical standards might not be the most obvious saviour. Certainly not if you think about it logically.

"I set the technical directions ... and make sure all the bits of the pieces fit together"

What do you do for a living?

I do four things. I'm director of the World Wide Web Consortium, and that means that formally I'm a member of the Lab of Computer Science at MIT (the Massachusetts Institute of Technology). What I actually do with my time is manage the staff of the consortium, along with a bunch of other people. I set the technical directions and talk to the people about the specs and make sure all the bits of the picture fit together. I also spend time being a spokesperson for the consortium because I am quote Inventor of the Web unquote.

How comfortable do you feel with that role?

It doesn't help to sit in a back room and get all our members to agree on a standard if nobody knows what it's all about, if nobody knows where it's going to go, so explaining what it's all about is a very important role.

You said the role of the press is to do a lot of those vendor-specific things that the W3C can't do. Is the press doing a good job?

Yes, it's doing a pretty good job. There are times when it really brings the point home, and there are times when we read articles by people who just haven't done their homework. So it varies a lot. Of course I'd like it if there was more analysis by the press of which companies are using the Web standards. We do our best, but the focus at W3C has always been on the technical development.

Are you proud of what you've achieved?

Yes I am. I think it's great. People have often commented about how passionate I feel about it. I get so much recognition it's ridiculous, because most people who invent things, they don't happen to be global things. Sometimes I feel the consortium should celebrate more, because we've accomplished a whole load. There's much more to be planned, but we've got some of the pieces in place.

You don't seem happy discussing your personal life – do you see that as intrusive?

Yes, I do. Because family life doesn't need to have the fame of global recognition mixed up in it. So if you want to ask lots of personal questions I'll happily not answer them.

Are you losing your British identity?

There's lots of British things I miss. I have a sense of British identity. I have a lot of nostalgia for Britain and Switzerland. I don't get back to Britain as often as I like.

Your keynote came across as rather fuzzy. What's the difference between evolution and evolvability?

Evolvability is a property of the technology so it can evolve to the next stage. We can evolve the Web by making it move on from HTML 4.0 to HTML 5.0 to HTML 6.0, but if we make it so that HTML 5.0 is really difficult and everything breaks when we move to HTML 6.0 because there's some really silly features in HTML 5.0, then that would be stupid. In fact, we've made it so that HTML 4.0 does a great job, and the evolution of style will happen in CSS (Cascading Style Sheets). Evolvability looks at that process in the context of the Web where there's a large, competitive community of people introducing new technology. How we can make it smooth for users so that we don't get incompatibilities as we move from one standard to another.

CSS has taken quite a long time to reach version two...

How long has it taken? A year. Is that a long time? What's that, two and a half Web years?

But one of the key things is the length of time involved in the standardisation process. Because of the complexity of moving forward,

Curriculum Vitae

1976 – 81	Graduates from Queens College, Oxford with a degree in Physics.
1981	Founding Director of John Poole's Image Computer Systems
1984	Took up a fellowship at CERN, to work on distributed real-time systems for scientific data acquisition and system control.
1989	Proposed a global hypertext project, to be known as the World Wide Web
December 1990	The program 'WorldWideWeb' was first made available within CERN
Summer 1991	The program appears on the Net.
1994	After developing specifications for URLs, HTML and HTTP, he moves to the Laboratory for Computer Science at the Massachusetts Institute of Technology to become Director of the W3 Consortium

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do you think it's becoming too unwieldy and slow? And are there ways to speed it up?

I'd really have to ask myself whether it's got slower. It seemed to take forever to get agreement about HTML before version 3.2, but the move from 3.2 to 4.0 was relatively rapid. The W3C works best in getting consensus and co-ordinating design. If we arrive at consensus and all the major players are going away with a working draft even before it's a recommendation, that's the value of the consortium. It takes time for manufacturers to produce products. It takes time to experiment with things if they haven't already been put into products. But in fact the core part – from when somebody says 'hey, we need to make a synchronised multimedia integration language,' to when they go away knowing what that SMIL is like, pretty fast.

What happens when companies turn their backs on new standards? If they don't put standards in their products – and let's be honest, we're talking about Microsoft and Netscape here – then you have no executive authority.

We have no executive authority, we're a place where people can meet. By the way, there are several companies involved. If you look more broadly at the technology covered by the Consortium, and you look at things like handheld devices and televisions, you'll find a large number of companies.

"He should take a stance more often, he's a powerful figure"

Robert Cailliau, head of the Web office at CERN, talking about TBL's reluctance to comment on W3C members, particularly Netscape and Microsoft.

There are a lot of players, and if you go into specific areas you'll find different players have different strengths.

Not only can we get a group of people smart enough to put this thing together, but we get the major players to agree, and to put it into their product. You can get a commitment from a company and then in 18 months things can change – a company can be bought, the best laid plans go awry. But one of the prerequisites of us starting something is that there's a clear plan for it to turn up in software.

So who decides which standards to develop?

Normally it starts with our members coming to us. Take SMIL. Members all felt they needed a way to do it. All the major players were at a meeting and agreed that would be a pretty good idea. When you have a mandate like that, it's reasonable to go ahead. Yes, there's a danger that within large companies you can have different departments arguing, or markets change, but we don't allow people to sit there developing something without having demonstrated it's actually going to impact reality.

Well, what about PICS? Netscape didn't adopt it.

What was the deliverable for PICS? For a lot of people it was the Communications Decency Act being overturned. In those terms, PICS delivered.

So PICS as a technology had a political basis?

In everything, there's always a mixture of political, social and technical pressures. With PICS there was a high political content, and that was not necessarily to get it deployed. The agenda was not that every parent should be using PICS, the agenda was that the government should see that it was possible for parents to use PICS, so that the pressure should be off the government to deploy draconian legislation.

There are a lot of areas that are becoming more political – crypto, e-commerce... Will you have to change the W3C's structure?

The W3C is technical, and that's how it's going to remain. But a third of our technology is specifically driven by the relationship between technology and society. We have staff who talk to the groups discussing the policy aspects of technology. We have an active role explaining what impact technology can have on society. But we're not going to become a policy group. The policy groups and governments come to us to ask about technology and society because the Consortium defines the technology. While we're defining technology, we must necessarily be involved in society and its social implications.

What about your personal views? What do you feel about encryption?

Personally, I feel that the arguments for a fundamental human right for two people to have a private conversation even at a distance outweigh the very serious fears of it being used by criminals and terrorists. When constitutions were drawn up, the right to have private conversations wasn't included because it was so darn obvious that you could

"I get so much recognition it's ridiculous."

just go into a cornfield and have one. It's a much better basis for society than having to have a third party listen in.

With XML and RDF (Resource Description Format), are you playing catch-up? Do you wish you'd done this before there were 700 million documents on the Web?

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And RDF?

It involves introducing a more logical framework.

And do you wish you'd had this logical framework from the start?

No. I don't expect data on the Web to replace documents. Human communication through the Web is very important. There'll always be poetry, art and music, and this won't be analysable by logic. The new applications that will turn the Web into a great big database are going to be the boring ones. They'll allow you to fill in your tax forms, but they won't replace the Web as a creative and artistic medium.

But you have all those documents without metadata. Will we have to rewrite the metadata for all those pages?

There have been hooks for metadata for a long time. But people haven't used it because they haven't had the experience to know what it means. Initially, there were a lot of ways you could use HTML which were not picked up, because there were so many things to do which appeared to have higher importance. It's only when there's a mass of data out there that the pressure for metadata has got so strong. im

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Drive a Canadian mad

Q: How do you drive a Canadian out of his mind?
A: Charge his telephone calls per fraction of a second.

I've been growing increasingly anxious to find some outlet for my worries over the state of communications in the UK. Communications technology is near and dear to the Canadian heart. Canada is big, cold and dark, and people are isolated by the weather and the sheer geography.

When I left Toronto, I was paying approximately $25 per month (about £12) for a phone line. My ISP charge was about $20 per month (about £10) for unlimited access. So, you could be up and running for about £25 per month. Ah, I remember it well.

BT will single-handedly prevent the UK from playing any significant role in the development of the Net. It drives me mad. How am I to survive another gorgeously expensive BT ad, telling us to spend more! And suggesting we switch to ISDN when we can't even afford the basic service. In all fairness, BT probably offers a comparable service to Bell. The only problem is it charges about 10 times as much.

It's extortion. I'm a Web designer who can't afford to go online. I'm working blind. I have paroxysms of guilt when I connect to solve an HTML problem. It seems the only real long-term solution is to leave the UK.

Bradley Bell
Brad@autoscopia.ndirect.co.uk

Gail Robinson replies: Bradley! Don't abandon the UK yet, not while the *Internet Magazine* campaign for free local calls to the Net goes on. Turn to page 34 where we continue to give BT a hard time.

Security matters

I've just read Mike Bracken's article in your April issue about email encryption and security issues. Although I agree in principle our email should be secure, the entire issue of security is far broader than the Web. The possibility of the Government reading our email or determined hackers stealing our encryption keys from trusted third parties, is a drop in the ocean of insecurity.

As a computer professional who regularly discusses and installs email in commercial environments, I find this frequently and laughably obvious. One man was carefully explaining how his mail was far too sensitive to be entrusted to email, while carefully putting his old paperwork in a box to be left in the car park for "someone who recycles it". People who lie awake worrying about their credit card numbers being intercepted as they pass through Internet servers, hand their cards to waiters without batting an eyelid. While people are totally oblivious to the basic security under their own control, encryption will have no effect.

Even those who try to be careful are by no means safe. The Government is already quite capable of finding out your business if it wants to, without digging through your email. Telephone bugs can and are frequently installed at the discretion of the Home Secretary.

As Princess Diana found to her cost, mobile phones are equivalent to broadcasting your business on your personal radio station, yet high-flying executives are rarely without them. It's perfectly legal for anyone to install a normal bug. A quick browse through the Yellow Pages reveals a number of companies who will sell listening devices, and several more who will install them.

Industrial and personal espionage is quite achievable by anyone with a bit of imagination and/or cash, let alone by those with high-tech resources or are prepared to indulge in a spot of breaking and entering.

The whole problem is the same issue as newspapers claiming that the Net promotes pornography and paedophilia, but in a different guise. The Net has produced no new forms of human behaviour – it's merely a new avenue for them. The issue of our (non-existent) privacy is an important one, and to see it as a problem specific to the Internet is like hacking the tips off icebergs.

Kathy Jinkings
kathy@cfkc.demon.co.uk

Mike Bracken replies: While you're right to claim that security, privacy and encryption are pertinent to more areas than the Internet, for many people using the Net and email is often the first time they've had to con-

Star Letter

bookpages.co.uk

I have to say I totally disagree with your article on winning awards for your Web site. You said that most awards are not worth winning and there's no point in submitting your site to them.

Well that's balls. There are millions of personal home pages out there and 99 per cent of them will never win a real award of excellence for their site. Why? Because they're crap. But that shouldn't matter – it still takes a lot of effort to make a page and I say, if you have the chance to put a cheap tacky GIF on your site saying 'I won The Best of the Web Bob's Award', you should go for it. Viva Useless Awards! P.S. Award-It.com is the best place to get rubbish awards.

Mart Rivers
Coolmart@lineone.net

Gail Robinson replies: You're quite right Mart. We would never want to deprive any Web users of a bit of innocent fun. However, the article you mention set out to challenge the validity of these awards as a measure of the quality of a Web site. They're fun, but we shouldn't take them too seriously.

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www.bookpages.co.uk

sider the many issues of electronic privacy. Furthermore, the Government's consideration of a system of TTPs is serious news for Net users.

While security has to be treated holistically, I believe the use and abuse of email, key recovery issues and encryption are now of interest to a much larger community – entirely due to the growth of Net use.

Domain name tangles

Your story in the May issue about your favourite domain wrangle (**www.pokey.org**) gave us a warm internal glow. We're on the side of the little guy. However, the story misses the main point.

If domain name registration is working sensibly and responsibly, how on earth did Pokey's dad register it as a legal name? To be a .com don't you have to be a worldwide organisation?

This shows that the basic procedures must get better. The top level domain must be clearly appropriate, and possible clashes with trademarks must be checked out. This whole thing is a bit too important simply to laugh about.

S D Carter
Steve@carters.u-net.com

Mike Bracken replies: While you're right to point out that the issue of top level ownership needs addressing, the name in this case was pokey.org. These .org names are used in the most part by non-profit organisations, and as this site wasn't commercial, it's entirely appropriate to register it as a .org.

But the larger issues of domain name ownership and relevance are still to be decided. The Clinton administration's green paper has yet to be ratified, and the EU seems to be taking a different line to the US. We'll keep you up to date on all the developments, but in the meantime I'm sure you'll be glad to know that pokey has his name back (see page 12).

Labour's promises fall through the Net

I teach in a large comprehensive school in East Sussex. I supported Labour's Election campaign vigorously and was excited by the prospect of a Government that put 'education, education, education' at the heart of its policies. I was also interested in the importance the Labour Party gave to the Net. Promises were made:

"By 2002, every one of the 32,000 schools in Britain will have modern computers, the educational programmes to go on them, the teachers skilled to teach on them, the pupils skilled to use them, connected to the superhighway for free and with phone bills slashed to as low as £1 per pupil per year."

But in the cold light of day, I remain unconvinced about Labour's ability to implement this ambitious programme.

The task ahead is overwhelming. In junior schools, 50 per cent of desktop PCs are over five years old and of the 32,000 schools mentioned, only about 20 per cent currently have Net access. And let's not forget the National Grid For Learning, which is to be up and running by September '98! Surely walking on water would be simpler?

And where's the money coming from? In Bradford, there are plans to link up the 3,000 schools in the city online, in a partnership between Bradford Council, BT, Yorkshire Cable and Research Machines. So the bright new future Labour promised is to be achieved by schools and Local Education Authorities going cap in hand to the private sector.

Before you accuse me of cynicism, I wholly support the emphasis on IT and Net provision. In my school the Net has been put to a large range of uses. The pupil to computer ratio is an impressive 4:1. However, in financial terms we would have difficulty making Net access available to all pupils.

You need staff before the revolution can take place. I know Labour plans to use Lottery money to improve the training of staff, but I'd like to know when this will be available.

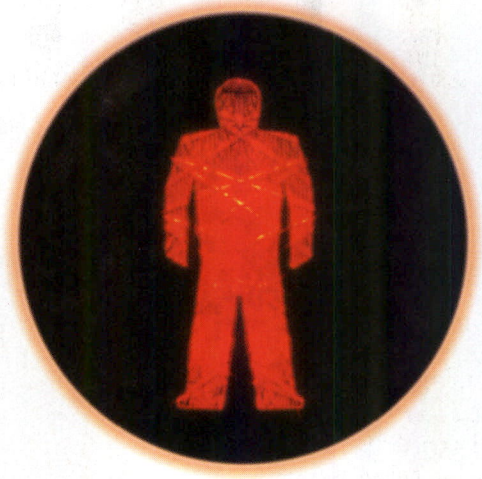
I would love to be proved wrong, but without a motivated, well trained, computer literate teaching force the campaign cannot progress beyond the foothills.

Jim Fanning
Tideway School & Sixth Form Centre
JFann16463@aol.com

Gail Robinson replies: Like you, Jim we're not convinced that the Government is backing up its fine words with action. Turn to the New Labour, New Net article on page 56 to see our view on how Labour is scoring on its Internet policy.

Understanding eBusiness signs (2).

Detterbeck/Hamburg



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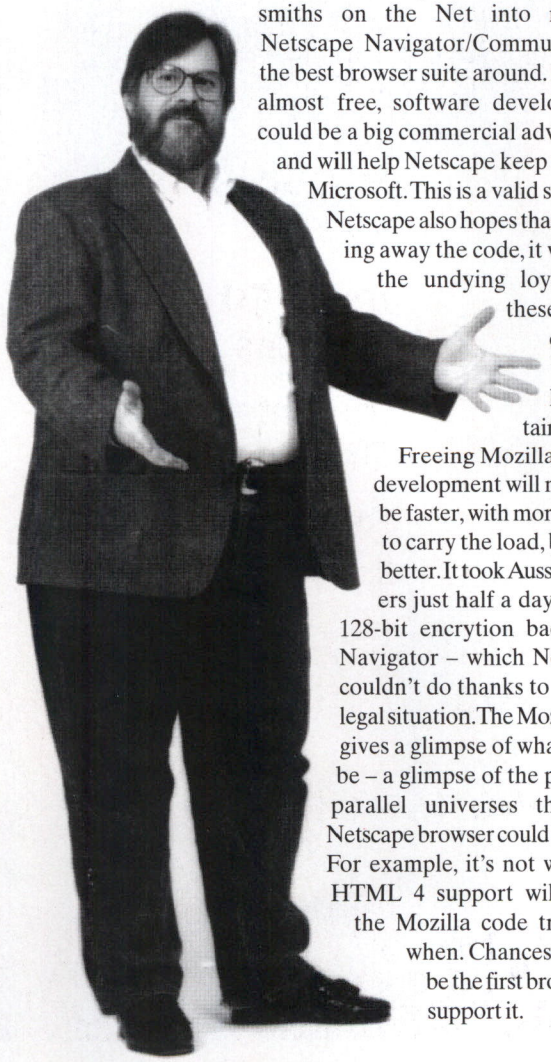
Netscape's free for all

Netscape has finally released its browser code to the world. Paul Lavin asks whether this is a true show of Net community spirit, or just a way to get product development done for free

So Netscape has released its source code under the Mozilla umbrella (**www.mozilla.org**). Mozilla was the code name for the original Netscape browser desktop back when the company was still called Mosaic Communications Corp. The name is a combination of Mosaic and Godzilla – invoking the revolution-catalysing capability of the first graphical browser and the might of a Japanese movie monster. But is this Mozilla strategy enough to stop *Gatesosaurus Rex* in his tracks?

Netscape hopes the release of the source code will spur the army of code-smiths on the Net into making Netscape Navigator/Communicator the best browser suite around. Free, or almost free, software development could be a big commercial advantage and will help Netscape keep up with Microsoft. This is a valid strategy. Netscape also hopes that by giving away the code, it will win the undying loyalty of these developers. This is less certain.



Freeing Mozilla means development will not only be faster, with more hands to carry the load, but also better. It took Aussie hackers just half a day to add 128-bit encrytion back into Navigator – which Netscape couldn't do thanks to the US legal situation. The Mozilla site gives a glimpse of what could be – a glimpse of the possible parallel universes that the Netscape browser could inhabit. For example, it's not whether HTML 4 support will enter the Mozilla code tree, but when. Chances are it'll be the first browser to support it.

But the biggest leap forward is likely to be in the user interface. As software becomes more complex, conflicting demands are increasingly difficult to resolve, says Mozilla guru Paul Phillips. A power user wants 10,000 features a keystroke away. A naïve user wants only a few common features without getting lost in some subterranean menu.

More developers will mine the gold of the browser cache. Perhaps a full text index of the HTML and plain-text contents of the browser cache and update it as the user browses? Allow a user to mark a document as one of historical interest, and then use the cache to track revisions? Periodically check if documents have changed, and track the revision? It's all possible.

"Is this strategy enough to stop Gatesosaurus Rex in his tracks?"

Co-operative software development is a well-established part of the Net ethos. The Linux operating system and Apache Web server are just two examples of good software developed after the widest distribution imaginable. It *could* work.

There's no denying that it's a bold move, but Netscape offered its source code on its own terms. The Netscape Public License (NPL) offers the source code to anyone clever enough to download it, but in some ways the applications Netscape creates aren't free enough.

NPL puts public-spirited coders at an unfair disadvantage. They can only use Netscape's code as specified by the license, but Netscape can use any changes made by independent hobbyists and hacks in any way it darn well likes. It could, and probably will, use the changes, corrections and amendments in proprietary licensed versions of the software. Fair?

NPL's lack of respect for privacy is, in the words of the Free Software Foundation (FSF) a show-stopper. Anyone making a change is required to publish it, and that means handing it back to Netscape so it can have its commercial way with your code. Changing the code for your own use is forbidden, as is distributing a change only to a few friends or just within your company.

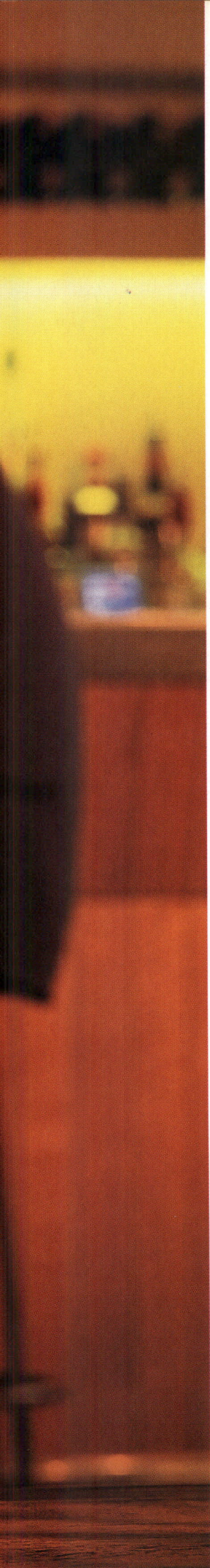
To the minds of the FSF (who equate free software with free air) it's folly that Netscape has failed to make its published source code totally free. To achieve its ambition of making every developer on the Net a Netscape ally in the battle against Internet Explorer and the Microsoftisation of the Net, Netscape can't afford to be seen having its cake and eating it.

Free source code isn't going to make ISPs or PC OEMs sign up with Netscape – Microsoft already got in there while Netscape was sleeping. And it's not going to make any future Netscape browser faster to download for the punter, although it may be more bug free thanks to the effort from the Bugzilla site.

Initial reactions from developers are mixed. The Version 5 code is still bug-ridden, and making sense of it will require time and talent. And then there's the Java dilemma. Netscape announced in January it's not continuing with in-house Java development, and rumours of Sun's interest in Netscape only muddy the waters. As Sun, IBM, HP and Microsoft wage war over Java, Netscape has been reduced to spectator level.

The whole source code gambit could turn out to be just another Netscape 'day late, dollar short' scheme. Since it started playing with the big boys, Netscape's record for getting its arse kicked is second to none. Perhaps we should start looking for a new champion. Mozilla's fire-breathing future is in the hands of the Net.

Paul Lavin (plavin@caversham.uk-win.net) isa consultant and journalist writing on the Internet and related issues.



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FIGHT FOR THE TRUTH

Throughout our campaign, BT has insisted that free local calls are impossible. Paul Smith takes a closer look at some of BT's main arguments, to see just how strong they really are

Our campaign for free calls is attracting more attention than Deidre Rachid. Tony Blair called me only yesterday, asking how things were going, and Clinton's offered a deal: pressure for our cause in exchange for persuading the Home Office to let Paula Jones emigrate here. Permanently. Well, I'm sure they were trying to get through, but my line was tied up with surfing the Net.

Meanwhile, back on Planet Earth, the campaign really is going swimmingly. We're still deluged with comments and ideas from you lot, and we're still fighting the good fight.

CLAIM 1

FREE LOCAL CALLS IN THE US DON'T WORK

The issue here is whether or not today's telephone networks can handle really long calls. The network is 'dimensioned' for calls lasting, on average, 10 minutes each. If BT offered free local calls, the length of calls to ISPs could run to many hours each or, conceivably, be almost permanent: if it costs you nothing, why hang up?

The BT argument is twofold. On the one hand, with today's telephone network, when you make a call, you take up a physical line between your phone and the destination phone, via a number of exchanges and trunks. This is regardless of whether you're talking, sending data or completely silent. And if you're using resources, you should pay for them.

The second strand, highlighted by David Hughes of BT in our April issue, is that free local calls in the US are proving disastrous as switches collapse under the weight of demand, even meaning some emergency calls can't get through.

Certainly, some of the main RBOCs (America's regional Bell operating companies) are toying with the idea of ending free local calls, with Pacific Bell, Bell Atlantic and Southern Bell among them. US exchanges are typically lower in capacity, and their local areas are significantly smaller. Whereas the average Internet call in the UK is, according to Martyn Warwick, editor of *Communications International*, some 25 minutes, in the States it's 2.5 hours. And, while you're surfing, no one else can use that line.

But, to date, none have chosen to abandon free local calls. We also dispute the first argument. The 'resources' that

Internet users want is simply the ability to send data. We don't care about trunks and switches and distribution frames. If BT wants to charge users by resources used, then charge by some meaningful definition – by data sent, or if that's not possible, then by a fixed fee. But not by something that we, as users, don't care about.

More fundamentally, we say: so what? It's the responsibility of BT to respond to its customers' needs. And those needs are for competitively priced Net access. The US has a fantastic advantage over the UK thanks to free local calls, and the Internet – a once in a lifetime technological revolution and an opportunity for the UK to compete with the US on equal terms, is being squandered due to outdated practices. Make the product fit the users' needs. It's that simple.

CLAIM 2

THERE'S NO LINK BETWEEN BT'S INTERNET SERVICE PROVISION AND CALL COSTS

John Swingewood, director of BT Internet and Multimedia Services, was at pains to point out to us that this link doesn't exist. Indeed, BT has tried to distance its two divisions, the Internet provider and the phone network and, in truth, cross-subsidisation between them would be fairly heavily hammered by Oftel and the other ISPs. But, as we've shown, the links between any phone network and the Internet are incontrovertible. It's impossible for the IMS division of BT to ignore the phone division, and not to have a view on the issue.

CLAIM 3

FREE LOCAL CALLS ENCOURAGE THE WRONG SORT OF USE

Free local calls, again according to Hughes, lead to users holding a phone line open for hours on end, even when they're not using the line, and this is wrong.

Well, you can tell Hughes doesn't have to rely on a dial-up connection! One of the biggest bugbears for today's dial-up users is connection time. It takes an average of 30 seconds to connect to my Demon account, which makes it impossible to use it as a near-instant access service. Another bugbear is the minimum charge (see Claim 5 over the page): it costs 5p for each of the many, many times I call Demon, and fail to connect.

But the real issue is simply that BT is making a serious mistake if it tries to take on the Internet. Use of the Net will not be on BT's terms, but on the terms of the Net's users. If the last few years have taught everyone, including Bill Gates, anything, it is that the Internet is a powerful steamroller: get on or get smushed. It's wholly inappropriate for BT to tell us we're not using the Net properly, when the truth is that we're not using it the way BT wants us to. Two separate things.

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Again, the point is a simple one: BT must respond to customer demand. Not the other way around.

CLAIM 4

THERE'S A SIGNIFICANT MARGINAL COST TO EACH CALL.

Perhaps. Simon Forge, director of the Cambridge Strategic Management Group, thinks we're five to 10 years away from a network with a zero marginal cost per call, in other words, one where each extra call costs nothing for the operator to provide.

The cost of a three-minute call from London to New York is about 100 times cheaper, in today's prices, than it was in 1930. By 2005, Forge predicts, a transatlantic videophone call will cost only a few pence an hour.

Thanks to technological advances, a huge increase in capacity and increased competition, the rate at which the cost of calling falls will increase over the next decade. The network has more and more intelligence, for routing, billing and other once human-controlled functions, now built into the network itself. This is combined with a real fall in the cost of the hardware which would bring falling marginal costs. The hardware (a new exchange is essentially a mainframe) is not cheap, but it's certainly cheaper in real terms than ever before. Forge sees this process going even further, towards commoditisation and the use of PC-quality equipment.

Resisting this is dangerous. When it was introduced, the high costs of the telegraph, about £1 a word (that's £40 a word today) stifled its use for decades. In a world of fast-changing technology, BT must learn to adapt quicker than it has so far.

One particular area of worry is distance. "The cost of calls has not been distance-dependent for over 30 years," says Martyn Warwick, "It costs no more to call China than to call a few blocks away." But historically, calls have been charged on this basis, presumably a hangover from the days when you had to book a trunk call, and a number of operators around the world arranged to open a line for you at the chosen time.

Now, this doesn't happen. The network does it all instantaneously. Unfortunately, it won't be easy for BT to drop that pricing structure overnight. Calls between different national operators are charged and paid for using a complicated system of settlement rates. And these certainly are distance based.

CLAIM 5

THERE NEEDS TO BE A MINIMUM CHARGE OF 5P PER CALL

This is possible the biggest issue. Why should we pay for a five-minute call that only lasts 30 seconds?

There are two sides to this charge, both of them historical. On the one hand, it's only recently that BT, by force of competition, has introduced per-second billing. BT, in common with most European PTTs, used to be a monopoly. That meant a couple of things. It had to offer universal access to a phone line and pay the same for it, no matter how remotely they lived – but it also meant that BT could charge what it wanted.

Led by Orange and then other mobile and wireless operators, BT has now had to concede per-second billing. It's a painful process but it's saved its customers a lot of money.

Except there's still this 5p business. For, on the other hand, there *is* a physical cost to setting up and disconnecting a call (the processes called 'call connect' and 'call disconnect'). But the cost is nowhere near 5p per call. Indeed, Warwick estimates it's somewhere in the region of one fifty-thousandth of a penny. "My opinion," he avers, "is that this is just a tradition... and a nice little earner."

WHERE TO GO FROM HERE?

It's clear that this is a fraught issue. On the one hand, BT is correct in some of its claims. There is still a marginal cost, however small, to each call. There are RBOCs experiencing problems with users engaging in 18-hour phone calls to their ISP, preventing voice callers from using the network. And the cost of local calls in the UK is cheaper than in most European countries, none of which have any tradition of free local calls. Scandinavia is the exception, offering significantly cheaper rates than BT can manage.

On the other hand, there's a clear case for reassessment. The Net is a unique opportunity for the UK to compete on a global basis in a way that has never been possible for so many Britons. It needs support, not hampering. And the current system of charging is failing users. It needs to be replaced by a solution that distinguishes between voice and data calls.

BT believes this solution is ADSL, a packet-based alternative network that will let BT charge by data transmitted, rather than time online. It offers individuals permanently connections, at high speeds and, we pray, at reasonable rates. Trials in the UK are just about to begin. But we don't know the pricing details yet. Indeed, BT may not either. It's too early to tell if this is going to be a viable alternative to analogue dial-up. And scepticism is warranted, if BT's pricing of ISDN is anything to go by. Even with its current offer of £99 installation, ISDN is expensive. What the ads don't tell you is the offer requires a two-year contract and £150 a quarter line rental. With an annual free call allowance, it works out at about £57 a month. Not exactly consumer pricing.

We have a better, more immediate solution – one that recognises the distinct nature of data calls, while discouraging excessively long calls. It combines pricing structures already in existence and should be simple to implement.

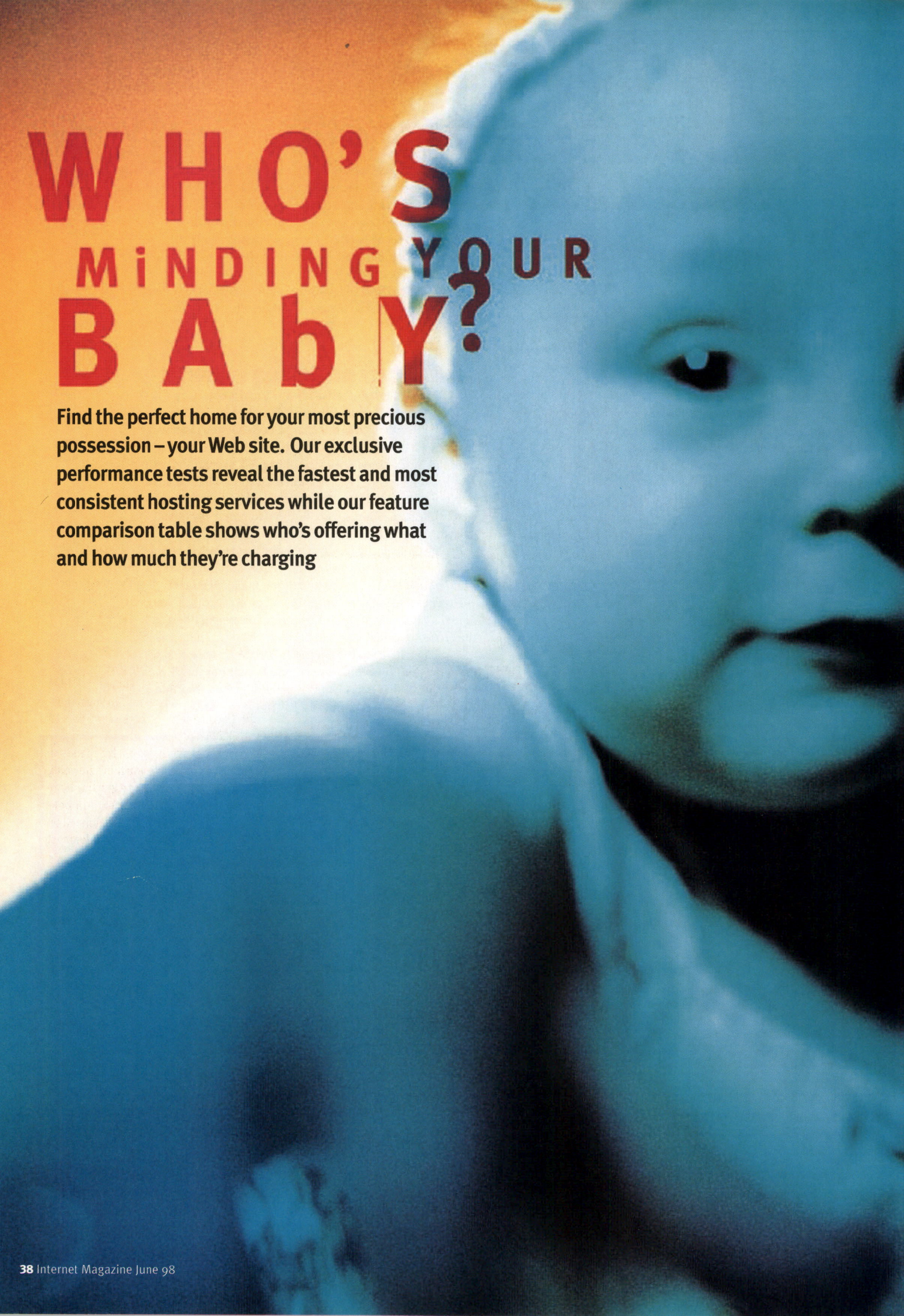
BT's Friends and Family lets you nominate 10 numbers and save 10 per cent on calls to them. And you can now nominate one of these numbers as your Best Friend and save 20 per cent on calls to that number. With PremierLine on top saving you another 15 per cent off all calls, this means that, if you're willing to say your ISP is your best friend, you can save 42.7 per cent on Internet calls.

This makes it fairly cheap at the weekends. You get nearly three hours for a pound. Unfortunately, this leaves the rest of week, particularly during the day for those that work from home and rely on a dial-up connection, still paying through the nose. And there is still the unjustifiable minimum charge to deal with.

We propose that BT adds a new Friends and Family 'Internet' category for your Net connection. It will attract the same 20 per cent off as your Best Friend number, but it will also be charged at 1p a minute at all times. Only registered ISP numbers will be eligible for this plan. Alongside this we demand that BT drops the minimum charge, at least on Friends and Family Internet numbers. If BT doesn't want to admit that it's an unnecessary charge, it can restrict the change to Internet numbers in recognition of the number of failed connections and the nature of Internet calls often being extremely short in duration.

There are other issues, hovering on the horizon. Warwick, for example, believes that VOIP (voice over IP, using the Internet to make long distance calls) is going to be very important. In fact, he believes that it represents such a threat to the telephone companies that they will be forced to make some sort of extra data charge on VOIP calls.

We await BT's response. But, more importantly, we await yours. What do you think? How much more would you be willing to pay in line rental for free local calls? And is your ISP your Best Friend? Let us know by writing to **free@internet.emap.com**.



WHO'S MINDING YOUR BABY?

Find the perfect home for your most precious possession – your Web site. Our exclusive performance tests reveal the fastest and most consistent hosting services while our feature comparison table shows who's offering what and how much they're charging

Choosing who to trust with your most precious possession – your Web site, of course – is one of the most important decisions you'll ever make. Whether it's a small site with just a few pages, or a complex site with hundreds of pages and lots of links to databases, you need to make sure you've found the best possible home for your baby.

Over the following four pages you'll find exclusive hosting performance tests (see page 42) so you know just how responsive your site is likely to be. On pages45 to 46 you'll find our comprehensive Hosting Feature Comparison table. From the best prices through to the low-down on technical support, you'll find all the details you need to make an informed buying decision here.

And to give you an idea of how other companies manage the hosting of their sites, we asked three of the biggest Web site builders how they chose hosting services.

Do you need to pay at all?

But before you even think about signing up with a site hosting company, you should investigate some of the free Web space deals that come when you sign up for a dial-up account (check out page 46).There's no reason why you can't use this free space to host a small site, as long as you're aware of its limitations.

Most ISPs impose limitations on what you can do with free space. You're often limited to non-commercial use of this space, and you'll usually find there are restrictions on the amount of traffic that can go through the site.

The other downer is the Web address you're likley to get with free space. Most of the names are along the lines of: **www.myisp.co.uk/~myname** . It's hardly a professional name to put on your business cards now, is it?

If you've already signed up with an ISP you might want to investigate some of the free Web space deals from companies such as GeoCities (**www.geocities.com**) and Tripod (**www.tripod.com**). In return for free space, you'll be compelled to carry advertising on your site. The space might be free but you'll still end up with a naff domain name along the lines of **http://members.tripod.com/~west4u/**

While all of this is fine if all you're doing is creating a home page, if you're launching a professional, business site you're better off paying for professional hosting services.

The big choice

Once you've worked out what exactly you want to do with your site, your next big decision is to choose whether to host the site yourself or to go with a professional hosting company.

Doing it yourself

It's perfectly possible to host a site yourself, but be warned – it's not a task to be undertaken lightly. The first thing you'll need is a permanent Net connection – you can't host a Web site through a dial-up account.

Once you've bought in your Net connection you then have to think about support – what happens if your line goes down? You need technical support services on tap – 24 hours a day.

You also need to know that your connection can cope with the traffic your site is likley to get. The last thing you want is for potential customers to go elsewhere simply because they can't get through to your site.

Then there's the security factor – how can you be sure that a bug in your Web server won't allow a hacker to break into your site, or even worse to find their way into your entire network?

On a more positive note, there's certainly no shortage of free Web server software if you do decide to do it yourself. Microsoft's Internet Information Server, for example, comes free with Windows NT (**www.microsoft.com/iis**). Alternatively, you can get the free Web server software Apache in both Windows and Unix flavours from **www.apache.org**.

The bottom line is that it's possible to host your own site, but it's not something you should think about doing if you're not familiar with the technical aspects of running Web servers.

Buying space

The less stressful and more common approach is to rent space on somebody else's server. The first decision to make here is whether you simply buy space on a server that you share with other people or whether you want to rent an entire machine for your site?

If you just buy space on a server, your Web site will be hosted on a machine that's shared with other Web sites. However, if you rent a dedicated machine, it's yours alone.

The choice you make really depends on the number of people you think are going to visit your site. If you're expecting huge amounts of traffic, it might be worth looking at renting a dedicated machine. However, a shared server will be fine for most sites – serving Web pages isn't a particularly hard task for a computer, so if the sites are held on a fast machine, it can easily

The Site Hosting Shopping List

When you're thinking about where to host your site, the first step is to make a shopping list of your needs. Remember to think about the following...

SIZE How big do you think your site is going to get in megabytes? If it's going to be huge, you might have to pay for the rental of extra space.

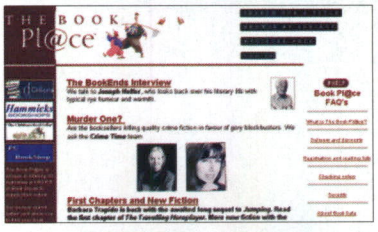
HITS How busy do you expect your site to get? This is measured in hits, where each hit is a user downloading one Web page or image. The more traffic you get, the more you'll have to pay to get your site hosted.

WHAT KIND OF PAGES YOU ARE GOING TO BUILD Are you going to create static HTML pages, or do you want to generate pages dynamically? If you go for the latter option, which system are you going to use to generate the pages? And if you're fixed on using a certain piece of development software, you'd better make sure your hosting service supports that product.

DATABASE LINKS Are you planning to link your site to an external source of data, such as a database? If so, what exactly will you need to do this? Oh, and you'd better tell any prospective site hoster what you want to do.

WORKING WITH A SCRIPT Many hosting services put restrictions on what you can do with scripts, or provide a standard set of scripts to use on their sites. Plan what scripts you want to use before you pick your hosting service.

The Book Place – the DIY approach



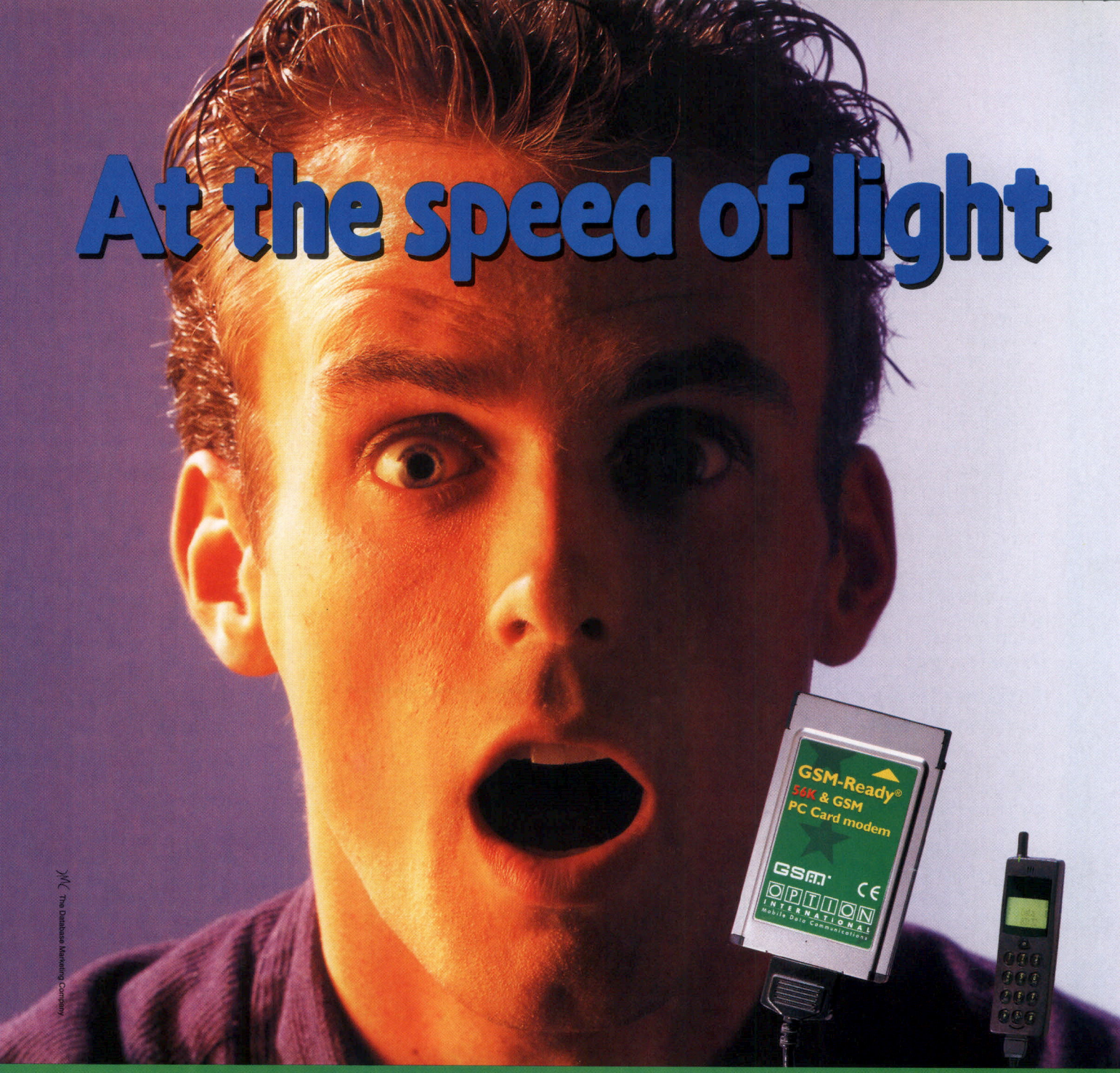
The Book Place is a huge database of books on a Web site – over 2.5 million at the last count. This database finds its way onto a clutch of sites (including those of book publishers). Initially, the site had been hosted by ICLNet, but the project has just been brought in-house. Matthew Pollock, MD of Book Place, found the company just couldn't get the level of flexibility and control that it needed from ICLNet.

The task of hosting is made trickier because parts of the database are used on other sites which are based on different database systems. While the site was hosted at ICLNet, the database had to undergo a conversion process from these other formats into one that could be used on the ICLNet servers. Now the site is hosted in-house The Book Place can take data direct from the database and put it on its own servers. It means it's much easier and faster to update the site.

The Book Place has gone down the well-trodden Microsoft route. It's an NT server which "offers a good price/performance ratio" according to Pollock. Microsoft's BackOffice suite provides the site management tools. The connection to the Net comes from Wispa: "they offered us a very good deal and our server is not buried nine routers down from the backbone, unlike other ISPs we contacted." Initially, The Book Place went for a 256K line, which they'll upgrade as traffic demands (the site is currently getting around 1 million hits a month).

www.thebookplace.co.uk

Photo by Big



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handle several hundred sites simultaneously, as long as the sites don't become too popular.

If you expect your site to get lots of traffic, then it might be worth looking at getting a dedicated machine. This is significantly more expensive, but it's much more flexible . Because it's your machine, you can do what you want with it, including running your own programs on there. This makes a dedicated server a good choice for anybody wanting to do fancy things with a site, such as running complicated scripts or linking into a database.

It is worth bearing in mind that many Web hosting companies have restrictions on the number of hits that a site can receive – check our table on page46 for details. It's important that you don't go over these traffic levels – you could find yourself incurring extra costs or, worse still, having your pages taken offline completely.

Registering a domain name

If you're looking to create a Web site for a business or company, you'll also want to register a domain name. This means that when somebody wants to access your site they use an address that looks something like **www.mycompany.co.uk**

If you register a domain name, it also means you can set up email addresses for that domain.

The cost of registering a domain name is typically around £80, but it varies depending on whether you decide to go for a .co.uk domain name or a .com domain. Many of the site hosting companies we tesetd offer package deals where domain name registration is thrown into the Web space price (see page 46). You can get some bargains here, so it's worth investigating and comparing prices.

You can register domain names yourself, but it does require some technical knowledge. See **www.nominet.org.uk /howto/index.html** for details of how to register a .co.uk name and take a look at **www.internic.net/rs-internic.html** for more on registering .com addresses.

EMAP Online – the third party option

The online division of EMAP (the company that publishes *Internet Magazine*) produces a number of popular Web sites, including Aloud.com, scrum.com and whatson.com. All of these services run from several dedicated servers housed in the offices of the big Leeds-based hosting service Planet Online. "We're very happy with this service," says Leo Lapworth, Network Manager at EMAP Online. "We went with Planet because of its reputation for excellent technical support, connectivity and guarantees of service. If we hosted the servers and our leased line went down, it would be a huge technical support problem. But Planet has several backup connections, so one connection going down wouldn't kill the site. Because we rent the machines, there's also a cost advantage and it makes it easier to upgrade the machines. We're currently moving from four separate servers to two Sun Ultra 2s with redundancy built between them."

Leo doesn't think that him being in London and the machine being based in Leeds is a problem: "We use a Unix server, so it doesn't really matter. We can connect to the machine as if it were in our office. If we need to install something from CD, Planet just puts the CD in the drive for us. So far, we've been able to do everything we need to do over our leased line connection."

www.emap.com/eol
www.theplanet.net

Pick your operating system

One of the biggest decisions to be made when hosting sites is which operating system you want to work with. This is a choice which has become increasingly difficult over the past year.

A couple of years ago it was all much simpler – the only choice was Unix – but now Windows NT is making a big impact on the hosting market. Many ISPs are sticking with Unix, as it can be cheaper to work with – it doesn't need such a powerful machine to run on and it has relatively low administrative overheads. Research carried out by Microsoft (bizarrely enough) shows that most hosts are still using Unix (around 78 per cent), although the number using NT is rising and many are now using both, giving users the choice.

But you will find that many ISPs have recently switched over to Windows NT. NT servers can offer extra features you simply can't get under Unix. An increasing number of customers are asking for facilities such as Active Server Pages and database integration, which are either only available on NT or are easier to run under NT.

Your choice of operating system centres around what you want to do with your site. If you're just producing straight HTML pages, then the choice of operating system really isn't that important. In fact, a host running Unix may be preferable, as Unix still has an unrivalled reputation for running for long periods without problems – many providers leave Unix-based hosts running for hundreds of days without the administrator having to do anything.

If you're looking to do something more complex with your site, then your choice of operating system is more difficult. What you have to do is work out exactly what you're doing and make sure that the host can cope with all these tasks. Explain your needs clearly to your hosting service and get them to agree (in writing) that they can handle them before you hand over any of your money.

Many of the more complex tasks that can be done on Web sites (such as streaming audio and video, scripts and credit card processing) can be done on both platforms, but some services are restricted to one. For example, Microsoft's Active Server Pages is, unsurprisingly, only available on Windows NT servers, although it's not limited to Microsoft servers – O'Reilly's WebSite product, for example, also supports Active Server Pages.

Making the decision

Fundamentally, choosing where to host your site is a question of planning. You need to know the answers to questions such as how are you going to build your pages and how much traffic are you likely to get before you make a decision. Whatever route you decide to take, remember you're likely to be stuck with your site hosting service for a long time – moving sites (especially complex ones) is a task that's best avoided.

● Turn over the page to get details of how our 47 hosting companies on test performed. For the lowdown on the services offered turn to pages 45 and 46.

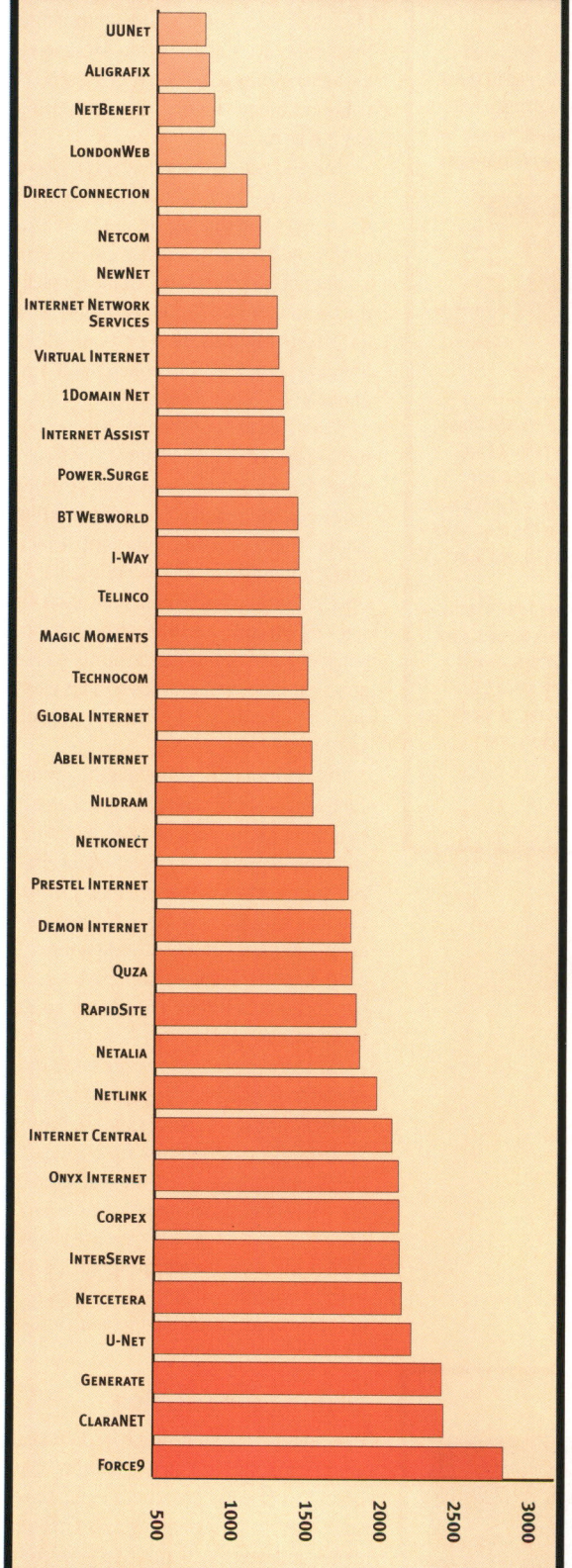
The Cancer Research Campaign – The Web designer as host

When the Cancer Research Campaign was looking to build a Web site, it decided to go with Oyster Systems. Oyster offered them a combined Web design and hosting service. "We host the site in our offices," says Luke Taylor of Oyster. "We can deliver far more to the client if we do it in-house. What we offer are the benefits of renting a box in an ISP's office for a quarter of the price."

Oyster did consider renting a machine in an ISP's office and running its client's sites from there, but eventually decided against that option. "Ultimately we need control, which is only possible with direct access to the box. There's only so much you can do remotely. Plus, going with an ISP only adds an additional possible point of failure – if there was a problem with the machine, we would have to contact them to try and get it sorted out. The only real argument for going with an ISP is to get access to large amounts of bandwidth, but it counts for nothing if you have to share all that bandwidth with millions of other people. With our own connection, we know exactly how busy it is and can quickly spot any problems."

www.crc.org.uk

Top performing hosting services



Those results in full

Charted above you can see the performance figures for all of the hosting services tested. Measured here is the average server response time measured in milliseconds – remember the longer the bar, the slower the response from the server, and the shorter the bar, the better the performance of the hosting service. You can see that the top three companies are bunched closely together, with UUNet just sneaking into the lead thanks to its consistently impressive performance results.

Testing the hosts

To help you choose the best performing home for your site, we ran a series of tests on the Web servers of 35 hosting companies. We carried out these tests in collaboration with N-Ary, a company which specialises in building Java-based systems and testing software. N-Ary's N-Formant system is designed to alert Webmasters when their Web servers are having problems, as well as monitoring performance generally. To find out more about the testing services N-Ary offers, see its Web site at **www.n-ary.com**.

To produce the results, the N-Formant testing system accessed the hosting company's Web sites every 15 minutes over a period of 31 days. The test involved sending a HTTP head command request, in exactly the same way as a normal Web browser does when it first tries to contact a Web server. The Web server then responds with various bits of technical information. If a server isn't powerful enough to deal with the number of requests it's getting, it'll take a long time to send back a response. This means the test is a good measure of how quickly the server can send out data.

The N-Formant system measures the time between the request being sent and the response being received and then uses this figure to calculate how long 1Kb of information would take to be sent by the server. We then took all of the data produced (over 25,000 samples for each host) and produced an overall average (this is the figure charted left).

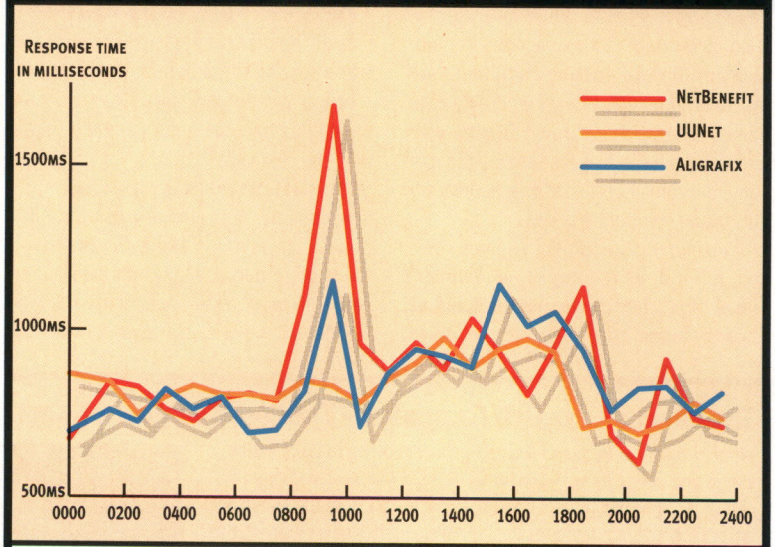
The results don't simply measure the speed of Web servers. We also measured the amount of time the request took to get to the Web host and back again. Effectively we're testing the overall performance of the Web host in terms of both server speed and network performance.

All of the hosting companies we tested have more than hosting machine. It would be impossible to test them all, instead we tested the server that hosts the company's own site. After all, if a company's own site is slow and unresponsive, it doesn't bode well for customers.

The test machine sat at the Network Operations Centre of Wisper, one of the biggest backbone providers in the UK. Wisper has connections to most of the major Internet exchanges in the UK. It also has direct peering arrangements with many ISPs in the UK. This meant our test machine was never more than a few hops away from the networks of the hosting companies.

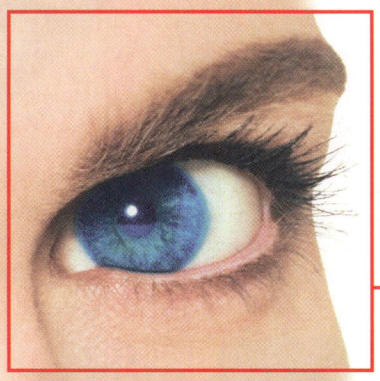
● The tests ran between 17 March and 16 April 1998.

How the top performers fared over time



We analysed the results of our tests to look at how the top three Web hosts (Aligrafix, UUNet and NetBenefit) performed over time. The graph was produced by creating an average for each hour of the day.

The graph shows some interesting trends. All the providers had a relatively uniform response, except for between 9.00 and 10.00 in the morning, when both Aligrafix and NetBenefit's response rates slowed down considerably. Presumably this is down to a glut of people getting into work and accessing Web sites or checking their email – the usage graphs produced by ISPs certainly show a large increase in the number of users going online at this time. Interestingly, UUNet didn't seem to suffer at this time. Its performance remained consistent over our test period – which is why the company came first overall in our hosting performance tests.



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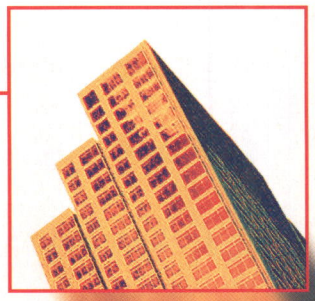
Simon Chapman, Prototype Communications
www.netcomuk.co.uk/~chaps/proframe.html



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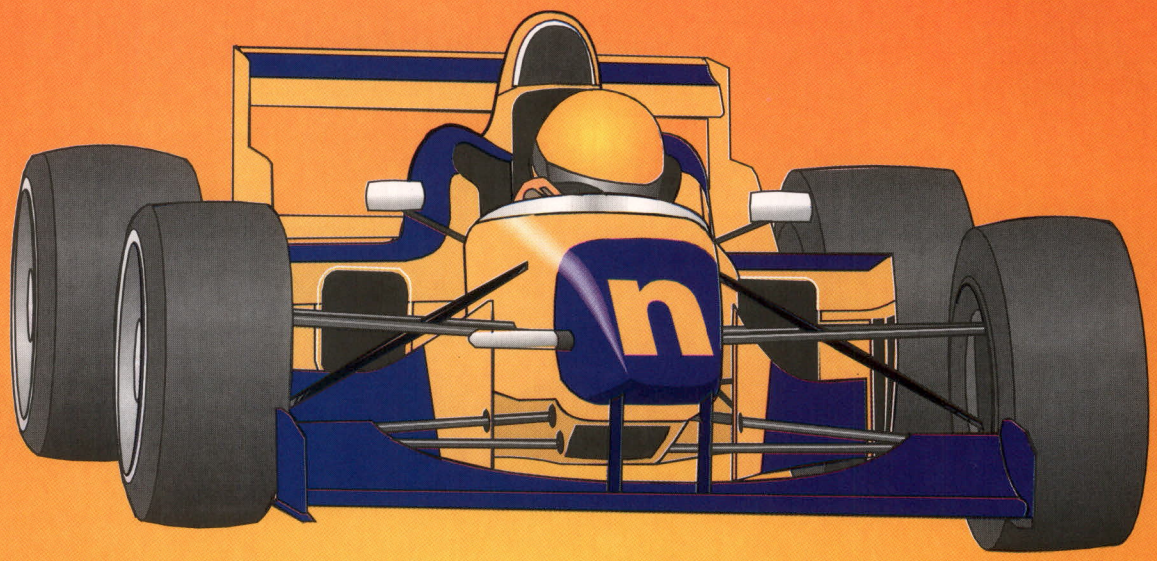

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Hosting services compared

What the table means

Please note: We encountered problems during testing with two of the Web hosting companies in our tests. This means that we're unfortunately unable to bring you performance figures for Planet Internet and Names.co Internet Services.

1 The average time (in milliseconds) it took our test machine to get a response from the Web server holding the hosting company's own Web site.
See page 42 for more details on how our performance tests work.

2 The minimum amount of Web space the hosting company will provide.
3 Any one-off setup fee charged for Web space.
4 Some hosting companies charge on a quarterly or annual basis. To allow you to make cost comparisons we've calculated costs on a per month basis wherever possible. Those that charge quarterly or annually are picked out with an asterisk (*)
5 Does the company offer a service (for an additional fee) to process credit card payments on a site?
6 Does the Web server support the direct uploading capabilities of Microsoft Frontpage?
7 Can you run your own CGI scripts?

Key: ✘ – No
✔ – Yes

Ranking	Company	Average 1 (in milli seconds)	Phone	URL	Minimum Space 2 (in Mb)	Set Up Fee 3	Price Per Month 4	Secure Servers?	Credit Card Payment Processing 5	Dedicated Machine?	Frontpage Extensions supported? 6	Run your own CGI scripts? 7	Pre-written scripts available?
9	1domain.net	1347.48	(0171) 610 9911	www.1domain.net	5	✘	£16.58*	✔	✔	✔	✔	✔	✔
18	Abel Internet	1545.89	(0131) 445 5555	www.abel.net.uk	5	£40	£7.91*	✘	✔	✔	✘	✔	✘
2	Aligrafix	846.44	(01235) 820 140	www.ans.co.uk	50	£50	£25	✔	✔	✘	✔	✔	✔
12	BT WebWorld	1445.47	(0800) 685 585	www.btwebworld.com	10	£25	£19.99	✔	✔	✔	✔	✘	✔
35	Claranet	2451.60	(0800) 072 0723	www.clara.net	5	✘	£8.25*	✘	✘	✔	✘	✔	✔
30	Corpex	2145.43	(0171) 242-4555	www.corpex.com	10	£100	£8.35*	✔	✔	✔	✔	✔	✔
23	Demon	1816.37	(0181) 371-1234	www.demon.net	5	£12.50	£10	✔	✔	✔	✔	✔	✘
5	Direct Connection	1099.15	(0800) 072 0000	www.dircon.net	5	Depends on service	£25	✔	✘	✔	✘	✔	✔
36	Force 9	2852.68	(0800) 073 7370	www.force9.net/bus	15	✘	£23.75*	✔	✘	✔	✘	✘	✔
3	General Internet/ Netbenefit	881.90	(0800) 592 755	www.netbenefit.net	50	£50	£20	✔	✔	✔	✔	✔	✔
33	Generate 74	2438.02	(0161) 283 3622	www.generate74.co.uk	10	✘	£12.5*	✔	✔	✔	✔	✔	✔
16	Global Internet	1526.39	(0870) 909 8000	www.global.net.uk	6	✘	£8.25*	✘	✘	✘	✔	✔	✘
17	GX Networks	1526.39	(0181) 957-1250	www.gxn.net	200	£200	£58.33*	✔	✘	✔	✔	✔	✘
13	I-Way	1453.77	(0118) 958-0058	www.i-way.co.uk	10	✘	£50	✔	✔	✔	✔	✔	✘
10	Internet Assist	1352.11	(0181) 547-3700	www.i-a.co.uk	5	£50	£27	✘	✘	✘	✘	✔	✘
28	Internet Central	2097.91	(01270) 611 000	www.netcentral.co.uk	2	✘	£10	✔	✔	✔	✔	✔	✔
8	Internet Network Services	1302.98	(0181) 239-5000	www.insnet.net	10	✘	£50*	✘	✘	✔	✔	✔	✘
31	InterServe 2000 (Websolutions)	2149.23	(01203) 778 073	www.interserve.co.uk	5	✘	£5.41*	✔	✔	✔	✔	✔	✔
4	London Web Communications	954.07	(0181) 349 4500	www.londonweb.net	5	£25	£20	✔	✔	✔	✔	✘	✔
14	Magic Moments	1474.08	(0171) 625-8086	www.magic-moments.com	20	✘	£13	✔	✘	✔	✔	✔	✘
N/A	Names.co Internet Services	N/A	(01325) 333 926	www.names.co.uk	5	✘	£10	✘	✘	✘	✘	✔	✔
26	Netalia Internet	1879.17	(0800) 074 0862	www.netalia.com	15	✘	£14.16* (inc domain name)	✔	✘	✔	✘	✔	✔
32	Netcetera	2164.71	(01624) 612 948	inetc.net	10	✘	£14.99	✔	✘	✔	✔	✔	✔
6	Netcom	1188.05	(01344) 395 500	www.netcom.net.uk	6	✘	£30*	✔	✔	✔	✘	✔	✔
33	NetDirect	2185.94	(0800) 731 3311	www.ndirect.co.uk	25	£9.99	£11.99	✔	✘	✔	✔	✔	✔
20	Netkonect	1702.25	(0171) 345 7777	www.netkonect.co.uk	5	✘	N/A	✔	✘	✘	✔	✔	✘
27	Netlink Internet	1995.28	(0171) 831 8000	www.netlink.co.uk	20	✘	£12.50*	✘	✘	✔	✔	✔	✘
7	NewNet	1258.17	(01705) 647 400	www.newnet.co.uk/home/	5	✘	£6 (£9.50 with email)	✔	✔	✔	✔	✔	✔
19	Nildram	1553.53	(01442) 891 331	www.nildram.net	5	£50	£40	✔	✘	✘	✔	✔	✘
29	Onyx Internet	2140.89	(01642) 216 200	www.onyx.net	5	£125	£16.66*	✔	✔	✔	✔	✔	✔
N/A	Planet Internet	N/A	(0500) 550 650	www.theplanet.net	N/A	£850	£850	✔	✔	✔	✔	✔	✔
11	Power-Surge	1384.71	(0800) 026 5617	www.powersurge.co.uk	10	✘	£5.50*	✔	✘	✔	✔	✔	✘
22	Prestel On-line	1796.90	(0990) 223 300	www.prestel.co.uk	1	✘	1Mb = £7 pm	✘	✘	✔	✔	✔	✘
24	Quza	1826.51	(0118) 908 7800	www.quza.com	10	£50	£50*	✔	✔	✘	✘	✔	✔
25	RapidSite	1855.00	(0171) 610-3992	www.rapidsite.co.uk	10	£29.95 (inc domain reg)	£17.95	✔	✔	✔	✔	✔	✔
15	Technocom	1516.53	(01753) 714 200	www.technocom.net	5	£50	£13.75	✔	✔	✔	✔	✔	✘
14	Telinco	1463.83	(0800) 542 4343	www.telinco.net	5	✘	£5	✔	✘	✔	✔	✔	✔
34	U-Net	2230.41	(01925) 484 444	www.u-net.net	10	£50	£25	✔	✘	✔	✔	✔	✘
1	UUNet	821.75	(0500) 567 000	www.uk.uu.net	10	£350	£54	✘	✘	✔	✘	✔	✔
8	Virtual Internet	1314.75	(0800) 117744	www.vi.net	20	✘	£15.83*	✔	✘	✔	✔	✔	✔

What it all means

8 Does the hosting company give you any Web site building templates?
9 What level of availability do the hosting companies offer for their Web servers? This is a crucial question to ask your hosting company. Any reputable host should put its money where its mouth is and offer guaranteed service levels to its customers.
10 Does the company provide free Web space to dial-up users?
11 Does the company provide domain name registration services? Please note that unless otherwise stated, the cost listed is for two years' use of a domain name. These figures include the fee payable to Nominet for registering a .co.uk name.

Key: ✘ – No
✔ – Yes
bw – bandwidth

Ranking	Company	Web Templates 8	Tech Support Hours	Free Technical Support	Uptime Guarantees 9	Limitations On Web Traffic	Is Email Included?	Full POP3/ Mail Forwarding	Web Server Operating System	Web Server Software	Log Life Analysis Service	Database Integration Services	Free Web Space 10	Domain Names 11	Cost of domain name
9	1domain.net	✘	9am - 6pm	✔	99.5%	✔	✔	Both	UNIX/NT	Apache/IIS	✔	✔	✘	✔	£80
18	Abel Internet	✔	9am - 11pm	✔	99%	✘	✔	POP3	UNIX	Netscape	✔	✔	✔	✔	£80 pa
2	Aligrafix	✔	9am - 5.30pm Mon - Fri	✔	98%	✘	✔	Both	NT	IIS	✔	✔	✘	✘	✘
12	BT WebWorld	✔	24 hrs, 7 days	✔	✘	✔	✘	✘	NT	Netscape	✔	✔	✔	✔	£45
35	Claranet	✘	24 hrs, 7 days	✔	✘	✘	✘	✘	UNIX	Apache	✔	✘	✔	✔	£50 pa
29	Corpex	✘	9am - 6pm Mon-Fri	✔	✘	✔	✔	POP3	UNIX/NT	Apache, IIS	✔	✔	✘	✔	£125 to host a domain
22	Demon	✘	24 hrs, 7 days	✔	✘	✔	✔	Both	UNIX/NT	Netscape/IIS	✘	✘	✔	✔	£100
5	Direct Connection	✘	9am - 9pm Mon - Fri 10am - 5pm w/e	✔	99.6%	Depends on service	Depends on service	✘	UNIX	Apache, Stronghold,	✔	✔	✔	✔	£10 per month
36	Force 9	✘	7am - 11pm	✔	✘	✔	✔	POP3	UNIX	Apache	✘	✘	✔	✔	£130 £150
3	General Internet/ Netbenefit	✘	9am - 6pm	✔	99%	✔	✔	Both	UNIX/NT	Apache/ IIS	✔	✔	✔	✔	£80
34	Generate 74	✘	9am-9pm Mon--Fri	✔	98%	✔	✔	Both	UNIX/NT	Apache	✔	✔	✘	✘	✘
16	Global Internet	✘	9am - 9pm Mon - Fri 10am - 6pm w/e	✔	✘	✔	✘	✘	UNIX	Apache	✘	✘	✔	✔	£170
17	GX Networks	✘	24 hrs, 7 days	✔	99.9%	✘	✔	Mail Forwarding	UNIX UNIX/NT	Zeus IIS	✘	✘	✘	✘	✘
10	Internet Assist	✔	9.30am - 5.30pm	✔	99.8%	✔	✔	POP3	UNIX/NT	Zeus	✔	✔	✘	✔	From £80
27	Internet Central	✔	9am - 6pm Mon-Fir Sat 9.30am - 6pm	✔	99.5%	✔	✔	Both	NT	IIS	✔	✔	✔	✔	£150
8	Internet Network Services	✘	24 hrs, 7 days	✔	99.50%	✘	✘	✘	UNIX	Apache	✔	✘	✘	✔	£150
30	InterServe 2000 (Websolutions)	✔	8am - 11pm, 7 days	✔	99%	✘	✔	Mail Forwarding	UNIX	Zeus	✘	✘	✘	✔	£65 to host for life
13	I-Way	✔	8am - 7pm	✔	✘	✔	✘	✘	UNIX/NT	IIS/Netscape/ Apache	✔	✔	✔	✔	£150 for 1 yr
4	London Web Communications	✘	9am - 9pm	✔	✘	✔	✘	✘	NT	WebSite Pro	✔	✔	✔	✔	£100
14	Magic Moments	✘	9.30am - 6.30pm Mon-Fri	✔	99.8%	✔	✔	Both	UNIX	Apache	✘	✘	✘	✔	Inc with hosting
n/a	Names.co Internet Services	✘	9.30am-4:30pm Mon-Sat	✔	✘	✘	✔	POP3	UNIX	Apache	✔	✘	✘	✔	£55 pa
25	Netalia Internet	✘	9am - 11pm	✔	90%	✘	✔	POP3	UNIX	Apache	✔	✔	✘	✔	£130
31	Netcetera	✔	8am-6pm Mon-Fri	✔	✘	✘	✔	Both	NT	IIS	✔	✔	✘	✘	✘
6	Netcom	✔	24 hrs, 7 days	✔	99.5%	✘	✔	POP3	UNIX/NT	Stronghold/ Netscape	✔	✘	✔	✔	£100 pa
32	NetDirect	✘	9am-9pm Mon -Fri 9am-5pm w/e	✔	✘	✘	✔	POP3	UNIX/NT	Apache/ IIS	✘	✔	✔	✔	£50 pa
20	Netkonect	✔	9am - 6pm	✔	99%	✘	✔	Both	UNIX	Apache	✔	✘	✔	✔	£200
26	Netlink Internet	✘	9am - 9pm	✔	✘	✘	✔	Both	UNIX/NT	Apache/IIS	✔	✔	✘	✔	£150
7	NewNet	✘	9am - 10pm 7 days	✔	99.7%	✔	✔	Both	UNIX	Apache	✔	✔	✔	✔	£80
19	Nildram	✘	9am - 11pm 7 days	✔	✘	✔	✔	Mail Forwarding	UNIX/NT	Apache	✘	✘	✔	✔	£80
28	Onyx Internet	✔	9am - 5pm Mon - Fri	✔	✘	✘	✘	✘	UNIX/NT	Apache	✔	✔	✔	✔	£100
N/A	Planet Internet	✘	24 hrs, 7 days	✔	✘	✘	✔	Both	UNIX	Netscape/IIS	✔	✔	✘	✔	Inc with hosting
11	Power-Surge	✔	24 hrs, 7 days	✔	99.95%	✘	✘	✘	UNIX/NT	Apache	✔	✔	✔	✔	£105
21	Prestel On-line	✘	9am - 5.30pm Mon- Fri	✔	✘	✘	✔	Both	UNIX/NT	IIS/Apache	✔	✔	✔	✔	£150
23	Quza	✘	24 hrs, 7 days	✘	99.95%	✘	✔	POP3	UNIX	Various	✔	✔	✘	✔	Inc with hosting
24	RapidSite	✔	24 hrs, 7 days	✔	99.9%	✔	✔	Both	UNIX	Apache	✔	✔	✘	✔	From £17.95 pm
15	Technocom	✘	9am - 5.30pm	✔	99%	✔	✘	✘	NT	IIS	✔	✔	✘	✔	£165
14	Telinco	✔	9am-9pm, 7 days	✔	99%		✘	✘	UNIX/NT	IIS /Apache	✔	✔	✘	✔	£150
33	U-Net	✘	9am - 5pm Mon - Fri	✔	✘	✘	✘	✘	UNIX/NT	Apache	✔	✘	✔	✔	£50 pa
1	UUNET	✘	8am - 6pm Mon- Fri	✔	✘	✔	✘	✘	UNIX	Netscape/ Apache	✔	✔	✔	✔	£200
8	Virtual Internet	✘	9am-6pm Mon-Fri	✔	98%	✘	✔	Both	UNIX	Zeus	✘	✔	✔	✔	Inc in price

NEWS SPORT WHAT'S ON FUN KNOWLEDGE MONEY SHOPPING TALK INTERNET

"Is there a major Internet provider that wasn't born in the USA?"

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It's what you want to know

Survival of the fittest

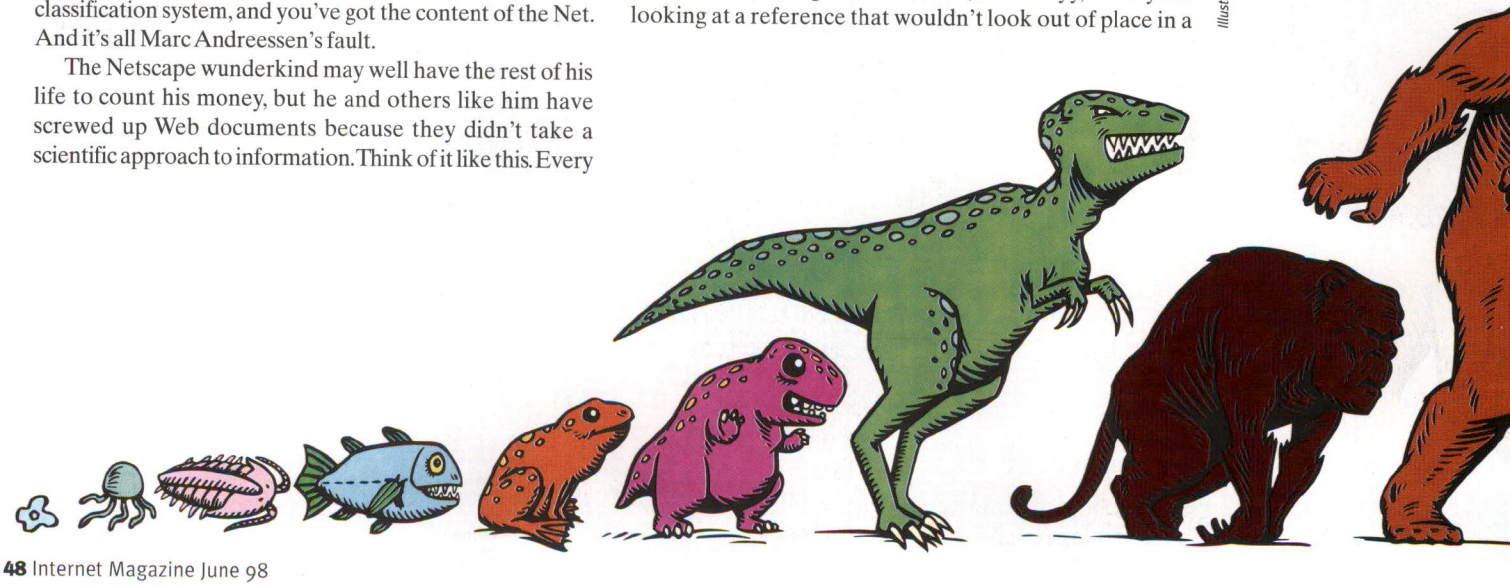
The Web is in a state of complete disarray. There has to be a better way to order the information on there. The good news is the Net is evolving and XML is the way of the future. Steve Patient reports...

There are over 700 million documents on the World Wide Web, and nobody knows a single thing about them. Not a sausage. I bet if your company has a site, unless you're creating the pages yourself, you don't know very much about them. You can barely tell who created them, when, and with what tools. It's often impossible to tell who has put them where, with what authorisation and how they've been ordered. And as for the content, aside from the plain HTML, there's no way to tell how it's arranged. In short, you can recognise this information, but you know nothing about it. Imagine the world's biggest library without an indexing or classification system, and you've got the content of the Net. And it's all Marc Andreessen's fault.

The Netscape wunderkind may well have the rest of his life to count his money, but he and others like him have screwed up Web documents because they didn't take a scientific approach to information. Think of it like this. Every document consists of three key ingredients. The first is structure. Structure is HTML. Then there's style. These are directions that control how the content is displayed. And then there's semantics.

Semantics, as applied to Web pages, is the relationship between content and meaning. So if you look at source code and you see the word 'date,' how do you know if this is a reference to a day or to a fruit? Well, if what follows looks like 10/12/68, then it's a fair guess that it refers to a certain day. You know that because, well, you've been around long enough, and you know a date when you see one. But do machines, do Web browsers? No. Not unless they're told to. Not unless the code they reference says something like 'If you see something in the format, dd/mm/yy, then your looking at a reference that wouldn't look out of place in a

Illustration: Chris Robson



calendar, not something you'd find at the greengrocers.' Well, it doesn't say exactly this, but you get the drift.

Essentially, what's needed on the Web are rules for semantics. A lot of people have been trying to get HTML to be those rules, but it just can't handle that, not in a million years. Which, coincidentally, is roughly how long it will take to add semantic rules – metadata – back into all those Web documents.

HTML hammers home

When HTML was developing, many people thought it would just continue growing, with new tags being added all the time. But what happened was that designers, tool-makers and the browser boys started to use HTML as a catch-all panacea. Oops. This may have been sensible. It even proved lucrative for Netscape, whose use of the layer tag muddied the waters but helped application vendors create a new range of Netscape specific tools. But it mixed up structure, style and semantics.

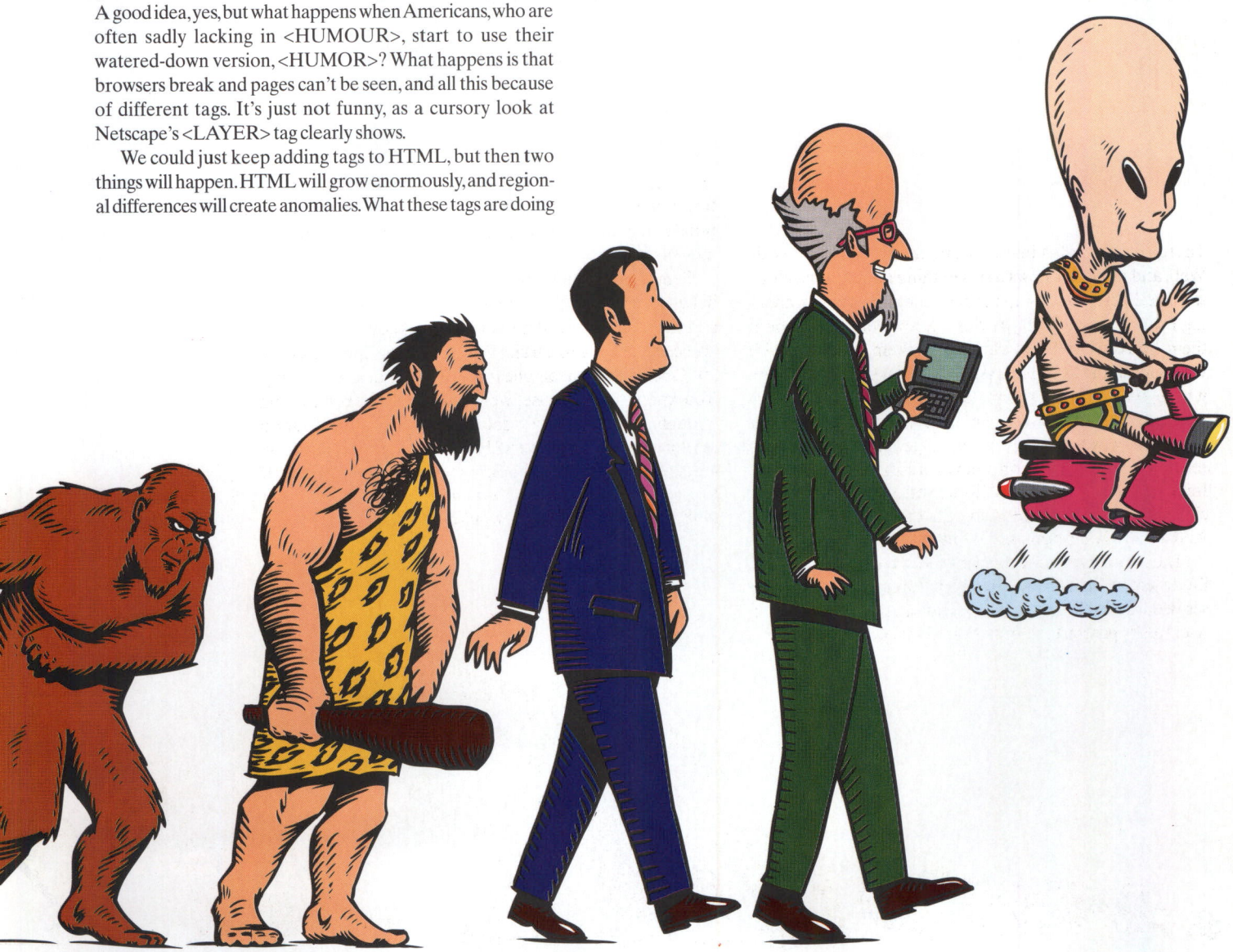
While it may be a good idea to keep adding new tags, such as <HUMOUR> to indicate where Web designers are joking (and we all know sites where the designers must be joking!). A good idea, yes, but what happens when Americans, who are often sadly lacking in <HUMOUR>, start to use their watered-down version, <HUMOR>? What happens is that browsers break and pages can't be seen, and all this because of different tags. It's just not funny, as a cursory look at Netscape's <LAYER> tag clearly shows.

We could just keep adding tags to HTML, but then two things will happen. HTML will grow enormously, and regional differences will create anomalies. What these tags are doing is identifying semantic information, not the plain structural information that HTML is for. HTML uses the <P> tag to indicate a paragraph, not the content within that paragraph. If that content is <HUMOUR>, then we need semantic information about this, not HTML. This is where XML comes in.

Come with me back into the mists of time...

Back in the land that time forgot – the 1960s – IBM ruled the world. And IBM ordered that world with a GML (Generalized Mark-up Language). From this, in 1986, came SGML, or Standard Generalized Mark-up Language. SGML is so complex that even the major SGML tool authors, such as ArborText, don't support it 100 per cent. SGML is huge and complicated, and contains loads and loads of arcane tags and commands that take too long to learn. It lets people manage, validate and structure information, and it's very powerful. But what the Web needed in the early 1990s was a small limited set of tags that everyone could understand and use quickly. Now, however, what we need is more metadata.

So this is where XML – eXtensible Markup Language – comes in. It's SGML for the Net. XML was first proposed in 1996 to free Web page authors from the limitations of predefined tags. It sounds simple enough, but the advent of XML heralds sweeping and dramatic consequences for all Web authors and users.



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The XML Developer

Web site designers are already using XML. We talked to Martin Cassell, senior Web developer at New Media Factory, about how he plans to use XML

How long have you been looking at XML?
I first realised this was something we should be tracking about six months ago, through my work with the Electronic Publishing Group at the British Computer Society.

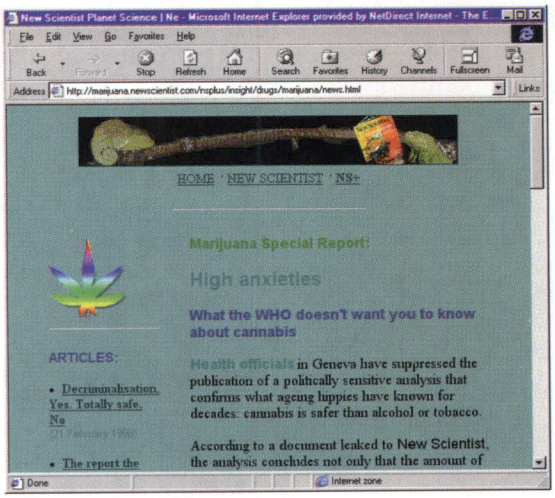
What makes XML interesting?
It's one of the few Web technology standards that Microsoft appears to have got behind properly. It's a good halfway house between the heavyweight SGML and the extremely lightweight HTML. HTML has now become little more than a dumb container for sealed boxes it delivers to helper apps.

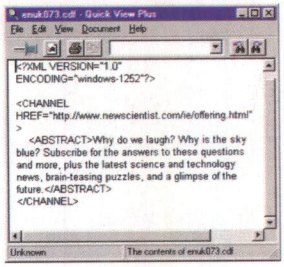
How practical is XML for existing HTML programmers to learn?
I see people taking a subset of XML and doing productive work. Different companies will use it in different ways. The proposal to allow XML without DTDs (see page 54) and include information about the tags within the document will make it much easier to build easy to use tools.

Are there any good XML tools yet?
One I like comes from Vervet [XML Pro] but there's certainly nothing for Joe Public, and there won't be until we see how the use of XML develops. Lots of early XML will be hand-coded by people who don't realise it makes a difference.

What advantages does XML offer developers?
XML is the revenge the SGML world is taking on HTML. The main advantage is the opportunity for a clean start with an agreed technology baseline. At the moment, we can't use the breaking stuff. We have to develop for a baseline around 18 months old – IE3 level basically.

What problems does XML bring to developers?
It will enormously magnify the current problems we have developing for two different platforms [Netscape and Microsoft]. It will be case of developing two sites, one with XML and one not. I don't see any way around this one.





A CDF file can be remarkably simple, or hideously complex depending on what you want it to do. This is the one supplied with IE4 for New Scientist magazine

And this is the single page the CDF references. A simple use of XML but effective and extensible

XML in a nutshell

XML is to SGML what Java is to C++. For SGML to work on the Web, it's had all of its most complex and least used bits surgically removed – a cut made in kindness essentially. But XML remains a valid subset of SGML and can be read by SGML document browsers.

IE4 already supports XML in a limited way through CDFs (Channel Definition Format) files, and Microsoft is one of the most active XML players. Microsoft sees XML as a good way to win corporate Net business. And it's right. Big organisations already create documents in SGML and dumb them down to HTML so that they can be

The Software Developer

We spoke to Jeremy Bedford technical sales manager at Adobe UK, about the effect XML will have on software and the Web

Why is Adobe supporting XML in products such as FrameMaker?
Two reasons really. First, Adobe has a large investment in the future of the Web and second, HTML is coming to the end of its useful life. It just doesn't support the formatting, searching and indexing that businesses need.

Will it displace HTML?
There's a lot of hype about XML, but HTML is a nice, simple standard and it's not going to disappear.

Can you see any problems with XML on the Web?
The same as for HTML. If different browser manufacturers don't support XML consistently it will be a problem. There's room for interpretation in the display, though not in the formatting and indexing.

If a company is producing HTML pages dynamically from a back-end database, for example, what's the benefit of switching to XML?
Not much with dynamic pages, only better formatting. It's more appropriate for documents intended for distribution.

Why not choose PDF files for better formatting?
Well, I'm not going to argue against using PDF. It's a great format, especially if documents are intended for printing, but it doesn't maintain the structure of the data in the way XML does.

Is XML good enough for EDI (Electronic Data Interchange)?
Almost. EDI covers a lot of document types. It tends to be used for data that will be worked on, while XML is basically a delivery and display format. Companies will look at it for EDI and some will use it.

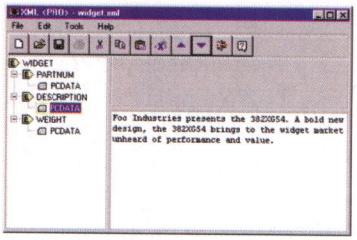
On the personal front, what benefits can end users of the Net expect from XML?
Better document display, obviously, but also much better searching. Search engines are beginning to lose their value now. XML will make them useful again because your searches won't rely on indexed content.

Will Web enthusiasts be able to use XML on their own sites, or is it a big company thing?
Well, XML can be well-formed or conforming. Well-formed is good enough for display purposes and we're already seeing plans to add this ability to existing HTML editors. For data exchange and machine reading, indexing and validation you need conforming XML. You can create XML pages using cascading style sheets, but conforming XML really needs a Document Type Definition. Even these are much simpler than those needed for SGML, though.

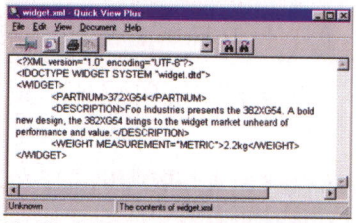
used on the Web. XML means they no longer have to do this.

XML is smart. It's used to write languages describing the logical structure of data. It adds intelligence to documents, allowing automated transfer of information from unstructured but marked up documents in a way that's impossibly difficult with HTML.

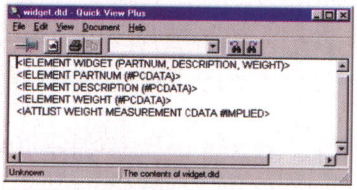
This intelligence means that an XML document can be re-used and presented differently for different audiences. For example, viewing the same XML document, a salesperson might see a customer contact list, while a manager will see the sales person's sales figures – all that information will come from exactly the same data.



XLM Pro from Vervet Logic is a free XML document editor as recommended by Martin Cassella t New Media Factory



The simple document produced in the first screenshot looks like this with a text viewer. Note the paired tags and XML header on the file



And this is the associated Document Type Definition (DTD) file which will tell your XML browser what the tags represent

And all this XML can be used for vendor-neutral data exchange. This idea is so commercially powerful that Microsoft is already busy adding support for XML to much of its software. Naturally, a new tag means nothing on its own. To parse an XML page there has to be something to tell the application what the tag means within the context of the document and whether that tag has any special attributes.

This handy little something is a Document Type Definition (DTD), a small file which contains instructions for the client, most commonly a browser, so that it can read an SGML subset of commands. This subset is often just one line which points to a publicly-

XML Resources

Microsoft

Includes standards, white papers, discussion documents, proposals and links. Although naturally a lot of it's self-serving, it's still probably the most accessible collection of material on XML around.

www.microsoft.com/xml

World Wide Web Consortium

Lots of links as well as all the formal proposals and final standards together with FAQs and sample material. It's the place to go for the final word on XML.

www.w3.org/xml

ArborText

One of the bigger SGML players with a vested interest in XML. Lots of useful material.

www.arbortext.com/xmlnews.html

Enthusiasts

There are a surprising number of sites maintained by those keen to promote XML on the Web. Check this out for links to interested individuals as well as the more formal material.

csvax.cs.caltech.edu/~adam/local/xml.html

SGML

You can find material on both SGML here and a link to a section devoted to XML from the same page. An excellent resource.

www.sil.org/sgml/groups.html

Developers

The XML-DEV list is a forum for developers of XML applications. Heavy duty material.

www.vsms.nottingham.ac.uk/vsms/xml/jewels.html

Newsgroups

There appears to be no specific XML newsgroup as yet, but you'll find plenty of discussion about it in the SGML user groups.

comp.text.sgml

Free XML Software

Microsoft's Internet Explorer 4

IE4 already supports XML, but you'll have to download the lastest version of the parser (in Java or C++).

www.microsoft.com/xml/parser

Jumbo

An XML broswer written in Java for viewing CML (Chemical Markup Language), XML pages, and any other XML files. Supplied as a collection of classes in tar.gz compressed files.

www.venus.co.uk/omf/cml/download.html

SX

A preliminary release by James Clark of an application built with the SP library for converting SGML to XML.

ftp://ftp.jclark.com/pub/xml/sx.zip

IBM XML for Java

A validating XML processor written in Java. The processor parses an XML document and builds a Java object tree. It also generates an XML document from a Java object tree. You need Java 1.1.

www.alphaworks.ibm.com/formula/xml

LT XML – XML toolset

High-performance, publicly-available XML toolset written in C. The LT XML tool-kit includes stand-alone tools for a wide range of processing of well-formed XML documents, including searching and extracting, down-translation (report generation, formatting for example), tokenising and sorting.

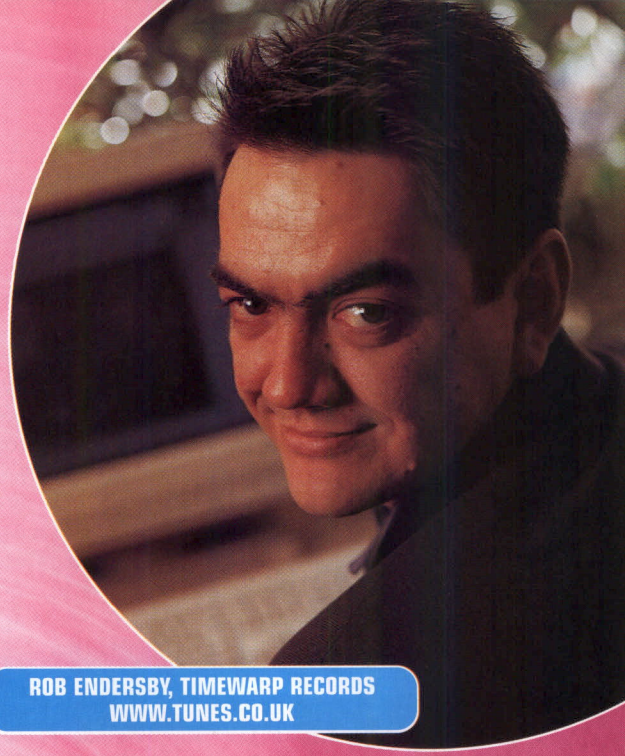
www.ltg.hcrc.ed.ac.uk/software/research_xml.html

XML ProVervet Logic

XML Pro is a full-featured XML text editor that allows the editing of existing XML files. It will also validate your XML document if you have a suitable DTD.

www.vervet.com

A few words of ENCOURAGEMENT if you have ambitions on the Internet...



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DAVID MULLEN, SUPER SHARP INTERNET SERVICES. www.supersharp.com

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D. HIRST, ORCHARD CREATIVE TECHNOLOGY. www.orchardcdg.co.uk

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available index of definitions. The DTD is held in a separate file, although Microsoft has put forward a proposal to allow XML documents to include their own definitions – which would allow your browser to parse an XML document without downloading a separate DTD file. Because XML defines and structures data, a customer using an XML-aware browser could visit a supplier's site and pull out all the information on blue widgets weighing less than five grams, for example.

On the downside, not all XML-aware applications can display all XML documents properly. This is an inevitable consequence of the infinite number of mark-up languages you can create in XML, and the equally huge possible number of data types XML documents can reference. To take a trivial example, you might just not have the font specified for the document.

To solve this potential problem, the W3C is in the midst of tying XML into a larger scheme of ordering metadata –the Resource Description Framework (RDF), which will let any Web author classify their information using metadata and then publish pages safe in the knowledge that the page will be visible to any browser capable of understanding the basic scheme of metadata.

For now,we'll see XML in the shape of formats such as CDF, but Web developers are beginning to sit up and pay attention. The long-term hope is that by allowing Web page authors to take control of their indexing system, the Web can become an ordered library of information and not just the chaotic heap of documents we've all become used to. im

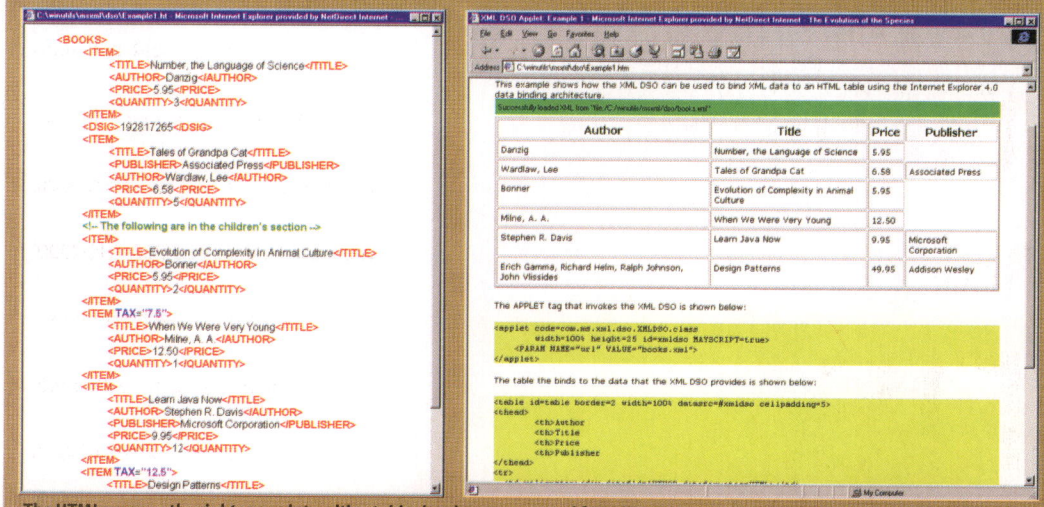
Why not extend HTML?

Why do we need XML when we already have Dynamic HTML, complete with stylesheets? Well, most people don't, and HTML will continue to be used extensively. However, DHTML only lets you specify and change the properties for existing markup, such as the <font> tag. It's great for animations and site maintenance but you can't use it to create new tags as the browser wouldn't know what to do with them.

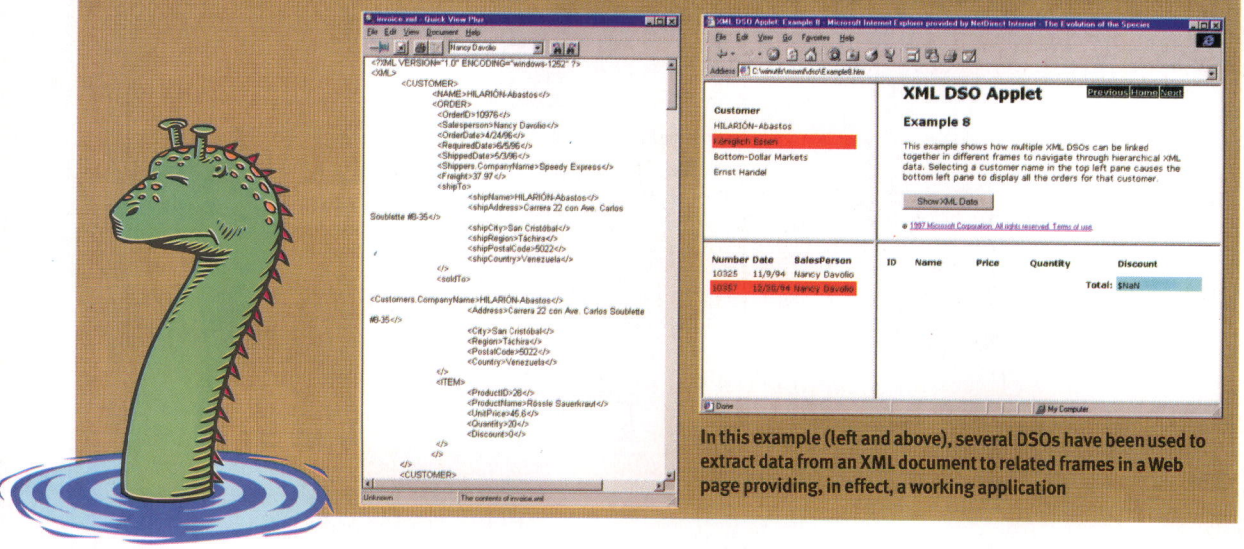
XML lets you create tags which provide information about data types in a way HTML can't. Because the browser knows what kind of data each part of a play's text represents – whether it's the name of a speaker, a speech, a cast list, title or stage direction for example, it can check with its style sheet and know what to do with it. You could probably produce the same effect in HTML, but an XML application could just show you Hamlet's speeches, or count the number of entrances and exits – and do it with any play marked up using a DTD.

So, data structuring is XML's big selling point, and you simply can't extend this with HTML quickly enough for everyone to keep in step.

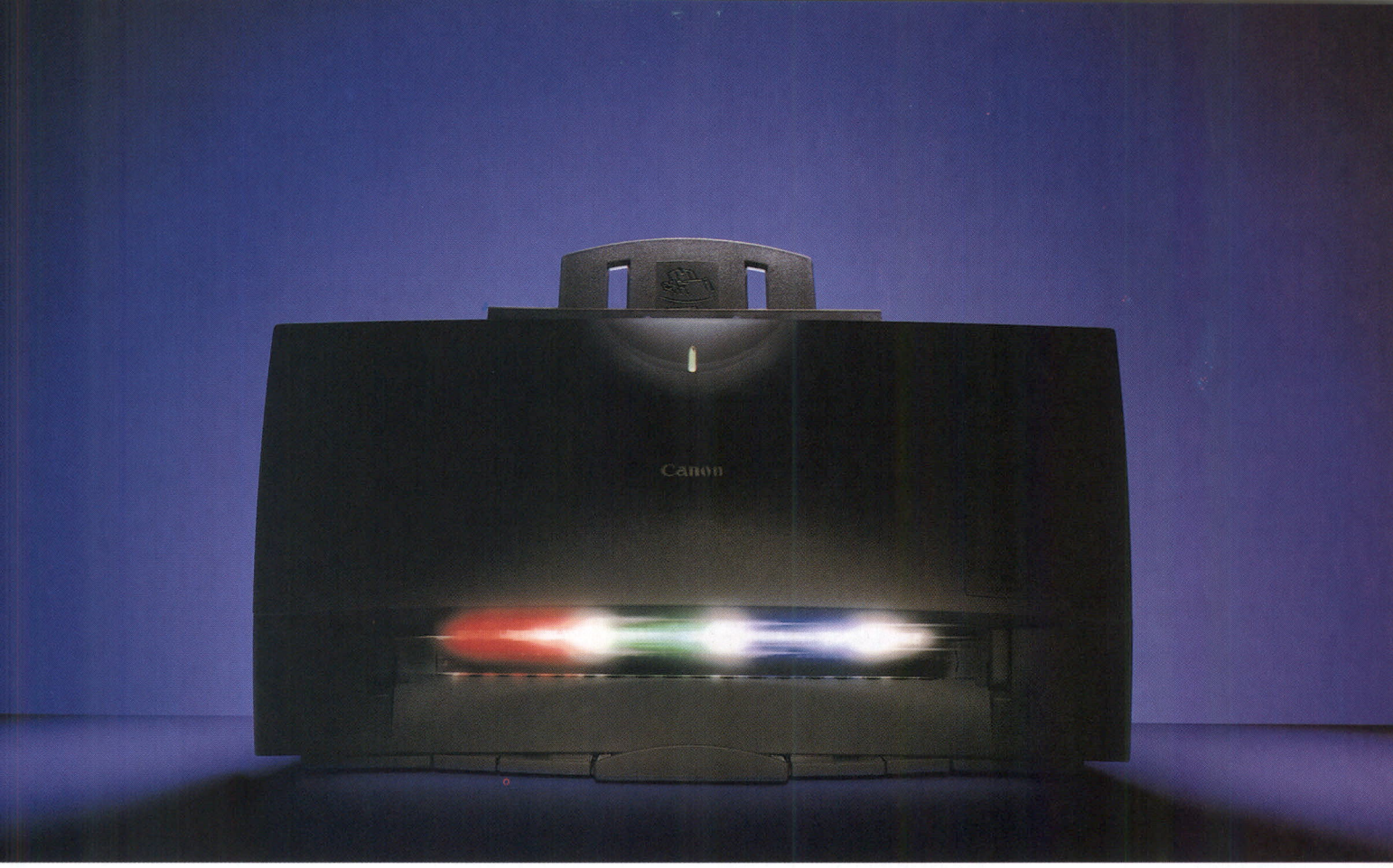
And here's XML at work...



The HTML page on the right, complete with a table, has been generated from the XML source shown to the left. XML specifies what kind of data is in the document. The XML Data Source Object is used to extract and display the data



In this example (left and above), several DSOs have been used to extract data from an XML document to related frames in a Web page providing, in effect, a working application



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New Labour New Network

When Labour came to power a year ago it was full of promises about what it would do for New Britain. The Internet, the symbol of the digital world, was to be the key tool for transforming the economy, the education system and even the way Government works. Bill Thompson, who helped write the Labour Party's Internet policy in 1995 (www.labour.org.uk/views/info-highway) and continues to influence policy as a co-ordinator of the Nexus online think-tank (www.netnexus.org) asks, is New Labour really fulfilling its election promises?

You can hardly move these days for Government announcements on the Internet, ranging from money to get schools online (£100 million) and retrain teachers, to electronic forms (for registering as self-employed), to a secure intranet for Cabinet Ministers with their Virtual Red Boxes. We've even had Science Minister John Battle sitting taking notes in the House of Commons with his Psion organiser and then uploading them onto the DTI Web site later that afternoon. The Internet is hot in Cool Britannia.

But even Labour MPs are concerned that the Government doesn't understand the Internet. Derek Wyatt was very clear in his view during a recent Commons debate: "The Internet may be hidden in cyberspace, but it's all-pervasive. It may be hard to tie down, and extremely hard to tie down within Government, but that's not an excuse for no action, and it's not an excuse for the existing scenario in Whitehall, which, frankly, is farcical. Because no single Department is in charge of the Internet, it falls into the black hole of cyberspace. Few Cabinet Ministers understand it: many still have no email addresses." (from *Hansard*, 18 March 1998, www.parliament.uk)

And Wyatt is not alone in his opinion. Although many Government departments are using the Net and the number of pages on the .gov.uk Web site is increasing rapidly, nobody can point to a coherent strategy. Science Minister John Battle's speech in the Commons debate included an impressive list of projects and promises, but there was no overall vision.

Pre-Election promises

An examination of Labour's policy documents turns up remarkably few Internet commitments. The 1997 Manifesto has a single Internet reference about getting schools online. The official policy document, 'Communicating Britain's Future' (www.labour.gov.uk/views/info_highway/) does little better, with a lot of fine phrases but no costed plans.

One reason for this is that before the election Labour was careful not to make promises, largely out of a concern that anything it proposed that had a cost attached would be used by its political enemies. But this gives us little on which to judge their effectiveness in office, and claiming to be a wired Government is rather different from truly understanding the network well enough to govern it, regulate it, promote it or even use it.

The problem of the Internet

The Internet does create problems for the Government because it can't be pigeonholed easily. At the moment, responsibility lies with Barbara Roche, a Junior Minister in the Department of Trade and Industry who works for Technology Minister John Battle. The Internet has always been a DTI responsibility, even under the Conservatives, because it's seen as a technology which affects our economic prospects.

But while the regulation and control of the Internet and of the Internet industry may sit with the DTI, it sometimes seems that every other part of the Government wants to get involved. The Department for Employment and Education wants its National Grid for Learning and University for Industry; the Treasury wants to ensure online taxes are paid; the Home Office wants to tap email traffic and copy crypto keys; and the Department of Health wants to transmit patient data. There's a patchwork of projects and activities, with no real co-ordination.

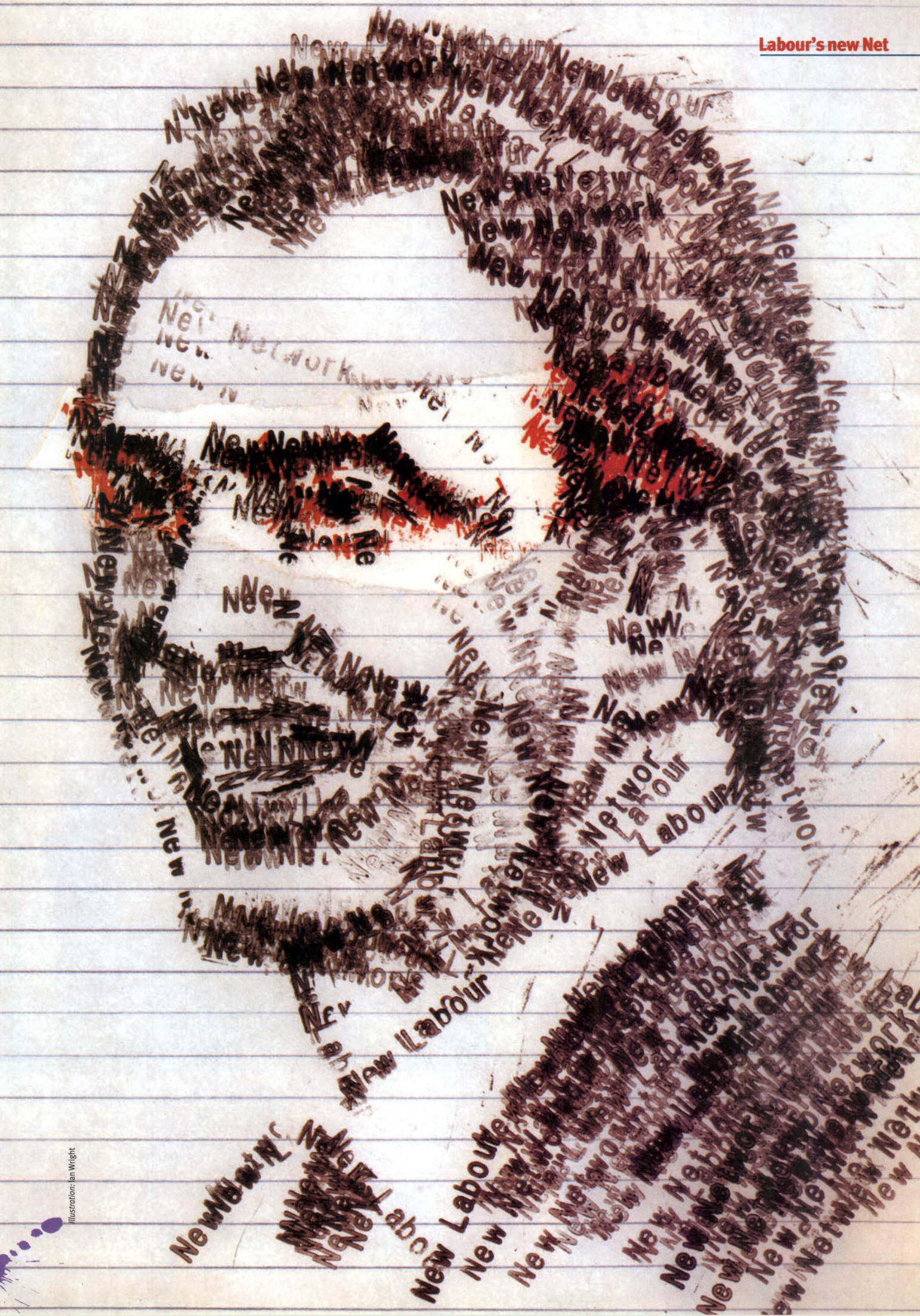

Illustration: Ian Wright

Whether it's teenagers keeping up with their friends, children discovering the internet, or you working from home, these days one phone line just isn't enough.

That's why BT will now install a second line for half price - just £58.17.

What's more, both of your lines can benefit from the BT discounts that you may already have, like Friends & Family and PremierLine.

The offer runs from April 1st to June 30th. To order, just visit www.2ndLines.bt.com, or fight your way to your existing telephone and call us on **Free***fone 0800* **22 22 99.**

BT *It's good to talk*

APPLIES TO BT CUSTOMERS ORDERING A 2ND RESIDENTIAL ANALOGUE EXCHANGE LINE AT THE SAME ADDRESS. LINE RENTAL APPLIES. MINIMUM PERIOD 12 MONTHS. DISCOUNTS MUST BE BILLED TO THE SAME ACCOUNT.

EDUCATION

Before the election education was one of the few areas in which Labour had made any concrete promises on Internet policy, arguing that "in many ways it will be in education that the greatest potential uses of the network will emerge".

In 1995 Blair announced that BT would connect schools, colleges, libraries and hospitals to the Internet for free in return for lifting Government regulations on its multimedia activities. This was followed in 1996 by plans for the National Grid for Learning, giving schools access to online teaching resources and creating a Commission on IT in schools. The Manifesto promised to get every school connected to the Internet by 2002, and to Net educate teachers.

Since May 1997 there's been a flurry of activity, with £100 million allocated to getting schools connected. The DfEE has published Connecting the Learning Society **(www.dfee.gov.uk)**. An agreement between Oftel and the phone companies has brought down the cost of an ISDN connection to less than £1 per pupil per year (the announced target), and the first stages of the National Grid for Learning Web site **(www.ngfl.gov.uk)** are online. Non-government initiatives such as UK Netyear **(www.uknetyear.org)** are also being supported.

There's been less progress in training teachers, despite promises to have all 500,000 teachers using the Internet within five years, although changes to teacher training qualifications mean that new teachers will be more IT-literate. However, the activity in this area hides the fact that having a single Internet connection – even a 128K ISDN 2 line – into a classroom with a number of networked computers doesn't bring the Internet to every child or every lesson. It adds a useful resource, but one that has to be booked. Unless new schools are built with networking, and old schools are helped to wire themselves up, the promise could mean less than 10 minutes of Net access per pupil per week.

The pledge to give every schoolchild an email address is also good in principle, but proves less interesting in practice. Excite got in first, offering free Web-based email accounts for all (details at **www.excite.co.uk/excite_post.dcg**). This was closely followed by BT with its Mill-e-mail project. But issues of privacy, access, and portability are still unresolved.

8/10 Trying hard. While there's lots of activity and a fair amount of money (£100 million is significant, but not massive), nobody has really sat down since 1995 and thought about how access to the Internet would change schools and colleges

BUSINESS STUDIES

The economic importance of the Internet is obvious even to the politicians, and the DTI is keen to encourage its use. Before the election, Labour said little, apart from woolly statements such as "we seek to maximise the economic advantages of the development of the new networks" (from *Communicating Britain's Future*). When Ian Taylor was the Minister in charge at the DTI, the Labour Opposition just whinged about how little he was doing, how ineffective it was and how they knew what was needed. There were few detailed promises made at the time, because Labour were scared of making any commitments that might cost money.

Under Ian Taylor, the DTI tried hard to encourage increased awareness and use of the Internet, setting up the Information Society Initiative (ISI at **www.isi.gov.uk**) in 1995 with £35m to spend, followed by IT for All (**www.itforall.org.uk**).

Since the Election, Labour has added little apart from the Enterprise Zone, which provides links to external Web sites. Whether this is because they think the Tories were doing a great job after all (unlikely) or because they've realised that doing anything serious in this area would cost lots more money (slightly more likely), or just because they have no real idea how to help UK businesses use the Net more effectively (odds-on favourite) isn't clear.

5/10 Could do much better. Even though DTI Minister John Battle is one of the few members of the Government who actually understands and uses the network.

TECHNOLOGY

The UK Government made its first tentative moves online in 1994 with the launch of the Government Information Service, (**www.open.gov.uk**) an entry point for all Government-related online material.

Prior to the Election, Labour said little, but approved in principle, although they criticised the launch of the Government.direct initiative, a plan to let people access Government services over the Net, due to the exclusion of people without Net access.

But in his 1997 Conference speech Blair promised that by 2002 at least one quarter of all transactions with the public would be electronic. He included phone calls and closed networks in his list, but the focus is on the Net. Since then, the Government.direct project has launched a number of pilot projects, the most important of which is an 'electronic form'. People can register as self-employed online using one electronic form instead of four paper ones. It can even be digitally signed (at pilot branches of NatWest bank), the first time these signatures have been accepted by a department. In its small way, this is a major breakthrough, providing a way for citizens to interact with Government, instead of just seeking information or submitting opinions. But it's still a pilot, and there's a lot to be done.

Government departments and agencies work in isolation and there's no overriding authority that can force them to work together electronically, despite the encouragement of David Clark, the Minister responsible for Government IT. And some of the efforts seem rather misguided, like the ability to download Government forms from the Direct Access Government Web site (**www.open.gov.uk/gdirect**) – only to have to print them out, fill them in and post them back!

A key achievement is the Government Secure Intranet (GSI), an internal network which lets departments exchange documents and email and access internal Web sites. This went live early in 1998, providing one of the most significant changes to the way the Government operates for many years. But the highly publicised 'virtual' Red Box, a secure laptop which can be used to store Ministers' papers and let them work remotely, is only a prototype at the moment.

7/10 for effort, 3/10 for achievement (but extra for the GSI). Must Do Better. Have to show what can be done.

GOVERNMENT AND POLITICS

There's been a lot of interest around the world in using the Internet to support Government, to let people contact their MPs or vote in referendums or even get involved in policy-making. In the UK there have been a number of online consultations, with policy papers being published on the Web and comments by email invited .

The two significant developments in this area are both outside the Government itself. The online pressure group UK Citizens Online Democracy (**www.democracy.org.uk**) has run a number of online debates and recently hosted one on the Freedom of Information Green Paper on behalf of the government. And Nexus, the 'virtual think-tank' (**www.netnexus.org**) held a two-week debate on the politics of the Third Way as a preparation for a seminar with the Prime Minister at 10 Downing St. In their different ways, these two groups are helping the Government explore the possibilities for more direct use of the Net, but for now they seem more interested in using the Net for distribution than for interaction.

3/10 MUST TRY HARDER, & DESTRUCTIVE INFLUENCE IN CLASS REALLY NEED TO ENGAGE WITH THE PEOPLE ON THIS ONE.

COMPUTER STUDIES

The key area of concern for all Internet users is not the way the Government itself uses or encourages the use of the network, but how UK interests are represented in the global Internet community. As the economic, social and cultural importance of the Internet grows, and as it becomes apparent to more and more people that the Internet will form the basis of capitalism in the next millennium, the need to work within a wider framework has become vital.

In this respect, Internet policy resembles economic policy. Just as it's impossible for the Government to control the pound's exchange rate or to manage the economy in isolation, so it's impossible to have the Internet in just one country. The network is global, and decisions affecting it which are made in the UK must be made in this context.

Here the key opposition is between the US and the European Union. Bluntly, the US acts as though it owns the global Internet and can dictate how it operates and in whose interests, while the EU sees the Net as a worldwide resource that should be developed in the interests of all. And, as in so many other areas, Britain is part of Europe but leans towards the US.

The two areas that are most relevant at the moment are encryption policy and domain naming. On crypto the Government has delayed an announcement of a key escrow policy (where everyone has to lodge a copy of their private key with a Government approved agency) several times, as it fails to reconcile the arguments that such an approach will severely damage the UK Internet (and prove unenforceable) with Home Secretary Jack Straw's desire to give police and security forces the ability to read all messages. Straw (and possibly Blair) have been persuaded to follow the US Government's lead here, probably as a result of briefings by the secret services, despite the fact that European Union policy is for an open network with no key escrow.

The other key issue at the moment is the future of Domain Naming Service DNS , with the US Government's proposals for privately managed top-level registries conflicting with the European Commission's call for an approach which reflects the international importance of the Internet. So far UK support for the EU position has been lukewarm, although it may simply be that nobody in the Government actually understands the issues rather than any real policy decision.

2/10 The British Government seems to be content to let the Internet evolve without its active involvement, hoping that it will be able to exploit it in future.

Report for School Year ending July 19 98

NEW LABOUR

Name .....

Form / Tutor Group ..... 1 ..... Tutor BILL THOMPSON Year 1ST

EDUCATION	8/10
BUSINESS STUDIES	5/10
TECHNOLOGY	7/10 + 3/10
GOVERNMENT AND POLITICS	3/10
COMPUTER STUDIES	2/10

FUTURE PROSPECTS

The Internet is not going away, and although there may be a lack of co-ordination over the whole of Government, the number of Internet-based projects is growing daily.

The Cambridgeshire Opportunity Links Web site (www.opportunity-links.org.uk), which provides information on childcare options and benefits to women who're returning to work after having children is going to become a national service with support from the Department of Social Security.

Benefits payments made by smartcard and eventually by ecash will provide a way to save money (on printing Giros) and reduce fraud, and the acceptance of digitally signed electronic documents (an EU Directive on this has just been published at www.europa.eu.int will help Labour hit its target for electronic transactions with Government.

There will also be changes in the way that Government itself works. Plans for the Scottish Parliament include a parliamentary intranet and facilities for teleworking MSPs (Member of the Scottish Parliament), although online voting is probably not an option.

At Westminster further experiments with online policy consultation, like the recent Nexus debate on the Third Way, may lead to a more open process although this is not inevitable – the Internet can be used for closed discussions too.

As to whether we will one day see the Prime Minister taking questions from MPs in a 3D virtual parliament, or the Queen's Speech on IRC – don't hold your breath. The British State has a long tradition of resisting change, and just because the technology is there it doesn't mean is has to be used. Tony Blair is reported to prefer scribbling notes on papers to using a computer, and even John Battle failed to persuade his department to let him plug his Macintosh into their network, despite being a Minister.

Labour is doing stuff about the Internet, however there's no strong voice within the Cabinet arguing for the Net. While we're unlikley to see a Minister for the Internet, Blair could easily set up a Cabinet Committee which looked at both Internet policy and the impact of policy elsewhere on the Internet. Perhaps even that's too much to hope for from a Government which remains more concerned with presentation than substance, both online and off.

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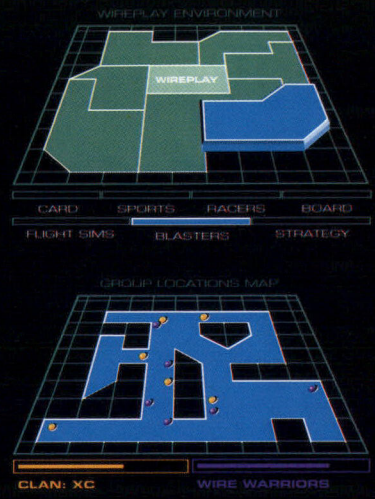

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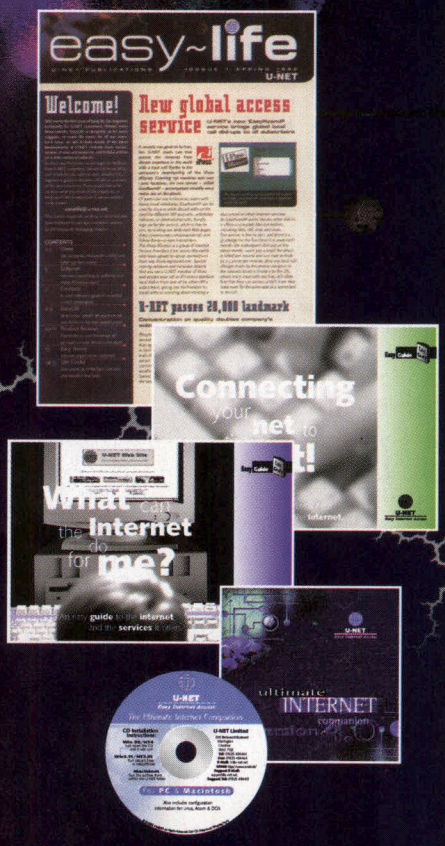

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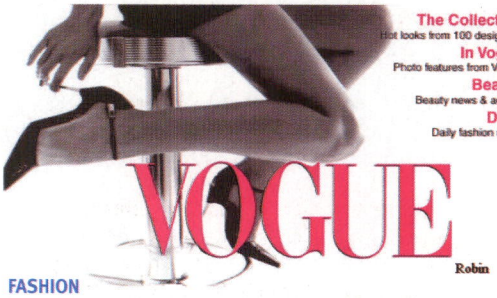


FASHION

For dedicated followers

Condé Nast is debuting its Vogue summer collection. The interactive library showcases collections from 100 fashion designers and includes a directory of this season's top trends. Search on item, colour, designer, style or your maximum price and, quick as a costume change, you're given a picture of your chosen frock and details of stockists.
www.vogue.co.uk

Money Marketing links to six stock exchanges, giving you prices from London, New York, NASDAQ and Hong Kong with a mere 20 minute delay. The service is available from Interactive Investor (**www.iii.co.uk**) and from its sister site
www.ifa.co.uk

Or you could always forget your portfolio and invest some time in the finance game, Global Strategist. There are prizes of up to $30,000 to be won.
www.global-strategist.com

Those looking for the really big money should head for Global Stock Games. Predict the top-performing companies on the New York, London and Tokyo stock exchanges and you could win $1 million.
www.stockgames.com

Less risky is the cornucopia of online competitions listed at the catchily titled Win Win Win.
www.loquax.demon.co.uk

Readers of *Hello!* or *OK* can now indulge in star gossip online. StarNews is a little US-centric, but slips in occasional video and sound clips. Channel 5, NBC Europe and Web designers Foresight New Media all muscled in on this one.
www.Star-news.com

KPMG has added a graduate recruitment section to its site. Got a query? Just enter your phone number on screen, and a KPMG graduate advisor (no less) will call you right back.
www.kpmg.co.uk/jobs

Yet more car purchases from Online Cars UK, but this site also offers a host of value-added features including performance, tuning info and owners' clubs and events. One for the petrol-heads.
www.online-cars.com

If you can buy or sell it, you should find it at the new classified site, Admatic.
www.admatic.com

games. Watch out for the special deal giving you a free ticket for someone aged under 14.
www.thorpepark.co.uk

Lego, meanwhile, is toying with programmable bricks and UFO Blast Off, a rather ace Superscape 3D game.
www.lego.com

As Wimbledon fortnight approaches, WorldSystems.com serves up its dedicated tennis search engine site, Tennis Org UK.
www.tennis.org.uk/tennistoday

And as Robinsons fruit juice adverts make their annual appearance, the Fresh Fruit & Vegetable Information Bureau is promoting a five-a-day fruit and veg binge.
www.ffvib.co.uk

Summer brings the onset of family days out, and Thorpe Park heads the list witha revamp. Cartoon cat Harley is your guide, and the site now includes information on the newest rides and more online

Bookpages celebrated its first birthday with a fairy godmother million-pound venture capital finance deal. The cash injection is likely to add features along the lines of its existing customer loyalty scheme and Wrapido book wrapping service.
www.bookpages.co.uk

US book-selling giant Barnes and Noble has teamed up with The Electronic Newsstand to offer subscriptions to over 450 mags at discounts of up to 80 per cent.
www.barnesandnoble.com

NewsNow, the UK's online news aggregation service, has added sports feeds to its sources. The best of *Sporting Life*, Soccernet, BBC Online, *The Guardian* and This Is London are scanned every five minutes.
www.newsnow.com

ABCnews.com recently unveiled a new interface, offering news, stocks and sports scores.
www.ABCNEWS.com

And while we're at it, the *Financial Times* has also redesigned its award-winning site. A complete reorganisation of the underlying architecture of the site means visitors should find it faster and easier to use.
www.FT.com

The guys at UK-2 shortlist and review UK-related sites and give awards on site content, design, navigation ease and entertainment value. Sound familiar?
www.uk-2.com

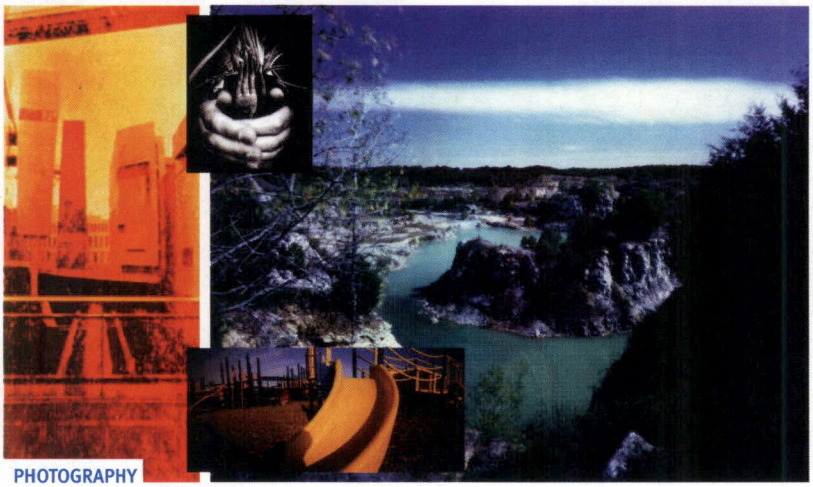
TOURISM

Have a good look around

St Paul's Cathedral has an informative, entertaining site that's chock full of graphics, and is supported by the might of BT. Any tourist heading for St Paul's should pay this site a visit before paying the not inconsiderable £7.50 entrance fee to the cathedral, crypt and gallery. Make sure you're QuickTime VR-ed up to appreciate the 360° panoramas of the building.
http://stpauls.london.anglican.org

eyor

phone calls are expensive. So save time and this month's essential sites



PHOTOGRAPHY

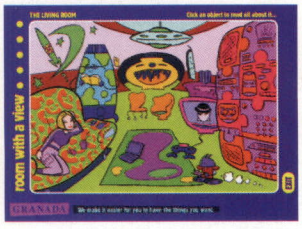
Through the pinhole

Photography must have come full circle when the simplest form of photography, pinhole cameras, transmogrify into state-of-the-art digital images. Find out how to build your own camera, and delve into resources for pinhole photographers.
http://pinhole.home.mindspring.com

In case you didn't know (and why should you), 1998 is the year of safe motherhood. The site is a useful information resource for anyone planning, expecting or with children.
www.safemotherhood.org

FHM, Loaded and *Esquire* readers are being wooed by the organisers of Toys for Boys, a 'lifestyle event for men', no less.
www.toysforboys.co.uk

While we're on the subject of Boy's toys, you should check out the Granada Home Technology site. The rental company has a flashy new site developed by TPD Interactive.
www.granadahome.co.uk



Walking down Carnaby Street has always been a somewhat surreal experience, but now you can do it from your armchair. Click on areas of the famous street and you're bundled there with a 360° QuickTime VR view.
www.carnaby.co.uk

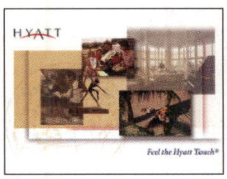
Watching Them, Watching Us is the latest Web foray for Mr Cybercafé, Mark Dziecielewski. The team behind this site was responsible for Michael Portillo's Home Page. (Cast your mind back to 1996, think WebCam, think pissed off Minister of Defence.) The site is trying to raise the level of debate on Public CCTV Surveillance.
www.spy.org.uk

More legitimate imagery comes from PC Photography, which now offers regular news updates, a classified section and weekly prize draw. A great resource of photo-editing tools.
www.photo-on-pc.com

How's this for a resource? A comprehensive list of radio stations using streaming audio. That's 97 radio stations, but the trouble is, they're listed alphabetically by region, so it takes ages to get to the 19 in the UK. It's redeemed by the chance to stumble across little-known delights such as Vatican City Radio
www.wrn.org/vatican-radio
www.frodo-u-net.com

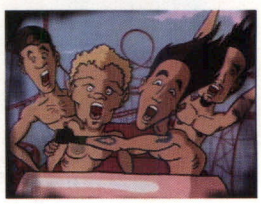
Not to be outdone by his Papalness, the Bishop of Durham is now online, but with no plans as yet to launch his own radio station.
www.auckland-castle.co.uk

Find the perfect Hyatt hotel. Check out the destination finder and the list of special deals.
www.hyatt.com



The appallingly insipid Pricecheck site for checking national domestic gas prices will be displaying combined gas and electricity consumer rates as of deregulation in September. Hurrah for the utilities.
www.pricecheck.co.uk

Most music tastes are catered for, but lovers of patchouli oil and leather trousers can get RealAudio feeds from the Rock Encyclopedia. Quotes from band members, links and the option to use Shockwave Flash.
www.kki.net.pl/stycze



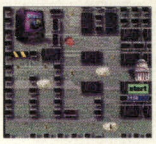
Why do they *do* that?

Internet Magazine has found you don't need a secure server to sell online, just a product and some imagination. Prince Alarming, self-proclaimed king of kitsch, sells furniture, ashtrays and Hawaiian rugs. A bid for his grandmother was refused only at the last minute when she was deemed 'not kitsch enough'.
www.princealarming.com

An American site dedicated to selling chocolates and sweets (both boiled and chewy) over the Net. The range is astounding, although by the time the packet arrives on your doorstep the munchies may well have worn off.
www.candydirect.com

The only site giving useful information about tobacco snuff? Well, who are we to argue? Unfortunately, the site's had to place a notice making it clear that it isn't about a certain unpleasant cinema genre. No purchasing of snuff online yet, but it's surely only a sniff away.
www.apg.u-net.com

And following on from our Gary Barlow site last month, what about the site of the much travelled, much maligned, much misunderstood Midge Ure? Top stuff.
www.btinternet.com/~suegoulding



Nearly a year behind the Spice slappers, here comes another inventive Shockwave game. This one involves Uncle Bill as Pacman, pots of money as food, custard pies as ghosts and a motherboard dash to the White House. You work it out.
www.hyperspective.com/piegates.html

Made infamous by the Nicholas Cage film *Honeymoon in Vegas*, The Flying ELVI are now online. Naturally, it's a marketing exercise to get you to book them for your wedding. And, amazingly, they're licensed by Elvis Presley Enterprises.
www.flyingelvi.com

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SPOTLIGHT ON...

World Cup sites

Paul Bennett spends a disproportionate amount of time cutting through the World Cup pre-match pre-amble to bring you the footie sites worth bookmarking this summer.

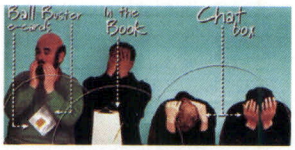
The Internet and sport are natural bedfellows. Heaps of statistics, instantly available results and loads of after-game chat are all best done over the Net. Sport sites score highly in ABC audits. Take away the Netscape and Microsoft home pages and the major search engines, and the Daily Mail's Soccernet football site's entry into the world's top 75 sites is astounding.

Meanwhile, the official IBM Nagano Winter Olympics site, largely ignored in this country both on TV and on the Net, drew a phenomenal 650 million hits. If that's the kind of traffic you can expect for an event that half the world didn't even compete in, the potential for the World Cup is truly awesome.

France 98 can claim to be the first World Cup played out online. Sponsors, news organisations and fans alike are drooling at the prospect. The Euro 96 online dalliance was a mere B team friendly by comparison. This is the real thing...

HP has been busy with its own site. A VRML stadium has already been built and plans are underway to add animated game highlights – similar technology is already being used by the Sky Sports team. Download speeds shouldn't be a problem because the animated characters are already stored on your hard disk.
www.hp.com/WorldCup98

Canon has a site in a similar vein. You'll find updates, match stats and a couple of novel Shockwave games called Dribble and keespy-upsy. Armchair



France 98

Hewlett Packard has teamed up with France Telecom, Sybase and EDS to launch the official World Cup site, the site by which all others will be judged. Fact-packed, fun-filled and advertised to death, passive Net trawlers are likely to stumble across this site first. There are some useful features including journey times between destinations in France – useful to the lucky three English fans with tickets.
www.france98.com

Your group-by-group guide to the teams' sites

Group A		
Brazil	Delightful ball handling with some flamboyant touches and a predilicition for the script font	www.luc.ac.be/~9613140/
	A more restrained site for the Brazilians. Fact packed with news andpictures of the team	www.proweb.com/mprais/futebol/brasil/futbr_english.html
Scotland	Official Scottish FA site – authoritarian but worthy	www.scottishfa.co.uk/
	Rebels should consult the more irreverant Dog's Bollix Scottish Football Guide	www.ftech.net/~gaudd/soccer/scottish1.html
Morocco	No specific site for the Africans, but the French-speaking Equipe Nationale Du Maroc does the team justice	www.enserg.fr/oelrhoul/index2.html
Norway	Only for those who speak Norweigan as a second language	www.fotball.no
Group B		
Austria	Clever JavaScript opener but then the site falls a little flat.	http://unet.uniview.ac.at/~a91046841/soccer.htm
	Austrian SportsNet gives you the official view but the site is lacking in depth	www.asn.or.at/oefb/
Cameroon	No dedicated site so it's a visit to the official France 98 site to get details	www.france98.com/english/teams/teambio49.htm
Chile	A personal home page wallowing in the delights of the England v Chile game earlier this year	http://surf.to/rodrigo/
Italy	Ranks as one of the tournamant favourites. Those Latinos have stats as far back as 1982. News is updated in English, Italian and Spanish. Real time Webcasts are also planned.	www.tin.it/rete/
Group C		
Denmark	A schizophrenic site with sections dedicated to Ajax, Amsterdam, Manchester United and an Eric Cantona tribute	www.geocities.com/Colosseum/Loge/8240/landshold.htm
France	Online since November 97 and teeming with RealAudio highlights. Includes a complete history of the tournament. Site revenues are already at £300,000 so they must be doing something right	www.worldmedia.fr/soccer/
	Good one for real fans	www.supporters.org/france98/
Saudi Arabia	The Saudi's rely on ESPN for their Net coverage	http://espn.sportzone.com/soccer/worldcup98/saudiarabiandex.html
South Africa	Check out Bafana bafana – the official supporters club for the South African team.	www.bafanaclub.com
Group D		
Bulgaria	The home of Bulgarian footie on the Net	www.binco.com/bgfoot/national/
Nigeria	Nigerian footie fan Johan Allard has built a quick, clean and informative site dedicated to the Super Eagles	http://home5.swipnet.se/~w-58456/
Paraguay	Good old Soccernet comes to the rescue of the Paraguayans	www.soccernet.com/u/soccer/worldcup98/teams/paraguay.htm
Spain	Part of the huge Sportec site this one's written in Spanish and certainly won't be shortlisted for any design awards	www.sportec.com/www/rfef/main.htm

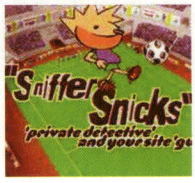
footie fans, (that'll be everyone then) can send electronic postcards from the bench.
http://sport.europe.canon.com

ESPN, Soccernet and France 98 have all been busy registering at search engines. They continually turned up at the top of lists for national teams. All are worth checking out for team stats.
http://espn.sportszone.com/soccer/worldcup98/
www.soccernet.com/u/soccer/worldcup98/index.html
www.france98.com/english

Capital Radio promises up to the minute coverage of important matches. Its sports journalists won awards for their coverage of Euro 96, so it should be good. There'll be online prizes and the chance to become a virtual team manager. And for those at work, there's a goalflash facility that sits in the corner of your screen while you pretend to do your work.
www.WorldCup1998.co.uk.

World Cup organiser FIFA demonstrates that international federations make rather dry sites.
www.fifa.com/index.html

Snickers



Success at Euro 96 made it a natural step for Snickers to enter the World Cup Web site race. There are two versions of the site. At the away end is the Snickers stadium – no cover, standing only and the worst burgers in the world. This version has none of your flashy animation. At the other end there's the plush version of the site in the director's box. Lavish carpets, champagne cocktails and Shockwave galore.
www.snickers.com

Four Four Two magazine keeps you updated on the latest comings and goings, but just may not have the resources of some of the larger guys come the tournament.
www.virgin.net/sport/442/index.html

Teams of the World is a site which centres around a debate forum, but what's rather nice is your team names spoken in local dialect. Check out Newcastle, Sunderland, Middlesbrough, (see a pattern developing here?), Darlington, Hartlepool (spotted it yet?) and West Ham. International team names are also spoken.
www.totw.org

Send a good luck message to your team at **www.footballbooks.com** and place a bet at the same time.

At the Pitch is not much more than a single page on World Cup news at the moment, but promises much.
www.finalwhistle.com/worldcup98/index.html
And if you need another news aggregator, try **www.wldcup.com**.

Games giant, BMG Interactive is set to release the much anticipated official England team game for PC and Playstation. If the site's graphics are anything to go by, it will help to fill the gaps between matches.
www.threelions.com

If there are any football sites we haven't mentioned here, you can find them for yourself by checking out the Gillette soccer search engine. Powered by Alta Vista, it's comprehensive but not too discerning.
www.gillettesoccer.com

But the best a man can get is Soccer Search. Compiled in association with magazine *Four Four Two*, it sorts the Premiership from the Doctor Martens League and is a more manageable option than Gillette.
www.soccersearch.com

...and if you're not sick of it all, check out England's bid to host the 2006 World Cup. The FA has sought help from designers Real Time Studio.
www.realtime-studio.co.uk
www.fa2006.org

ON THE CD You'll find all these links on our cover CD

Your group-by-group guide to the teams' sites

Group E		
Belgium	Planet Internet hosts something resembling an official Belgian site	http://voetbal.planetinternet.be
Holland	The official Supporters club of the Dutch team built this site with its amazing array of screensavers and wallpaper. Download the Dutch national anthem	www.supporterscluborange.nl/index.htm
Mexico	Patchy playing surface, littered with GIFs but content is good	www.futbolmundial.com.mx
South Korea	The minnows of the footballing world don't have their own site but go to the official France98 site for news on their performance in the Thailand King's Cup	www.france98.com/english/news/10264.htm
Group F		
Germany	A mere 6,000 visitors so far. More Jurgen Klinsmann links than you ever thought existed	www.me.udel.edu/~graybill/dfb.htm
Iran	Don't forget to check out the stirring RealAudio version of the Iranian team's theme song	www.iranfootball.com
	Remarkably in-depth	www.zal.com/Soccer/Default.asp
USA	Soccer-crazed American cousins pitch up a site with sections on the men's teams, the women's team, the under 18s, the under 21s and the under 23s	www.us-soccer.com
Yugoslavia	Fewer than 1,000 visitors, which is a shame as it's a rather good site. However they may be put off by the interminably long download times	www.fsj.co.yu
Group G		
Columbia	Not a lot of choice here. Frankly the ESPN coverage is about as good as it gets	http://espn.sprtszone.com/soccer/worldcup98/columbiaindex.html
England	Download the England wallchart and cast your vote on topics including picking the ugliest player on the team	www.england98.com/index.shtml
	Check out the supporters page	www.england-supporters.co.uk
Romania	Basic and unispiring but hey it's the only dedicated Romanian footie site and the national anthem is rather stirring	www.webcom.com/timis/soccer.html
Tunisia	News ticker can't relieve the dryness of this site. And it's written in French	www.ec-lille.fr/~korbaa/ess
Group H		
Argentina	A site touched by the hand of God – or not!	www.geocities.com/Colosseum/2773/
	A much better offering for Argentina	www.futbolargentino.com.ar/
Croatia	Comprehensive match reports on all their games but the site is ultimately let down by the speed of its server	http://pubwww.scre.hr/sport/international/teams/soccer/
Jamaica	A not-so laid back e-zine apporach from the Reggae Boyz	www.reggaeboyz.com
	Or try the confusingly similar	www.thereggaeboyz.com
Japan	Plenty of sites devoted to Japan's bid to host the 2002 World Cup but fewer pages about the national team. The Japanese Football Association is the pick of the crop	www.jfa.or.jp/html/jfa_e.htm

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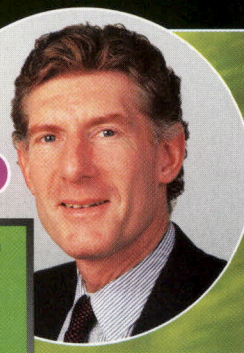

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SITE OF THE MONTH

A site that speaks your language

Online Magic builds the best World Cup 98 site we've seen and they've even made it multilingual

Just in case you didn't know, the World Cup is taking place in France in a few weeks. It's a 33-day event involving 30 national teams and 660 players. All kicking a piece of leather around...

Two and a half million tickets have been sold, and a staggering 37 thousand million spectators are expected to tune in to watch. The World Cup is one big commercial party! Web developers certainly think so, and are embracing the event like no other before – check out our round-up of World Cup sites on pages 67-68.

But June's Site of the Month award goes to the best of the plethora of World Cup sites – Online Magic's World Cup 98 site. Its use of technology is impressive and transparent, and they've managed to break down national borders by translating the site into multiple languages.

Online Magic arrived early to the World Cup party. Back in February 1997, David Bentley, account manager and Alistair Jeffs, the site producer,were pondering on events that would ,make good Web sites. Naturally enough the World Cup came up as a suggestion. Jeffs recalls the sequence of events: "In June 1997, General Motors Europe (GME) sent Online Magic a request for a proposal to do a World Cup site. As one of the 12 official World Cup sponsors, GME wanted a credible football site and they wanted to get people into their dealerships."

GME appointed Online Magic in August of 1997, and by December the World Cup 98 site had its first public airing. Six months later, and with the help of ten other companies the site is live.

The site has no specific traffic targets, although during the World Cup draw in Marseille on 4 December (two days after launch), the site was generating 800 page requests a minute. By the end of December, that was closer to the million mark. Traffic should reach at least these volumes during the summer.

Pushing the envelope

Online Magic wanted to use cutting edge technology but it also wanted to make the site available to as many people as possible. Although Online Magic makes no bones about the fact that this is a high spec site, at least it's made software upgrades as painless as possible. The site recognises which plug-ins are already installed on your machine, and downloading and installing Director and Flash involves a simple 'Yes, please install me' button click.

There's a non-Flash version of the site – useful if you're just after a quick fix of statistical information. But as a viewing experience it's rather like watching the World Cup on a 1950s black and white telly, complete with flickery picture and muffled sound.

The bottom line is if you want to get the most out of this site you're going to need a fast connection.

Site Of The Month

World Cup 98

Designers *Online Magic*

Development time
Four months

Development costs
£100,000

Monthly maintenance
£30,000

URL www.wc98.com

SITE OF THE MONTH June 98 internet magazine

What The Competition Thinks...

Internet Magazine asked World Cup 98's competitors to offer their comments...

During the half-time interval, *Internet Magazine* shuffled down to the away end and asked the opposing fans to give their opinion of the World Cup 98 site.

We got a mixed reaction. Andreas Herren, information officer for FIFA online (**www.fifa.com**) reckoned that "the site database is certainly comprehensive but I disliked it's rather hectic look in terms of colours and sounds. The latter are likely to become annoying when heard too often. In general, this will be yet another site like many with news from wire services (which you can find on countless other sites) whose novelty will wear off eventually."

Adam Garfunkel is a partner at Fantasy Factory, a company that developed an online Fantasy Football challenge. He too wasa less than impressed. "The site is available in four languages but once you've chosen the appropriate language the option is removed. I'd question the usefulness of the language options remaining on the left hand navigation bar. As you've already chosen the language, you're unlikely to change your mind half way through your visit. As these buttons are lined up adjacent to the navigation buttons, it gives the impression that the options are only available in that language."
www.fantasyfactory.co.uk

Putting the fans first

The site sets out to serve the footie fan. The information is useful and from credible sources, with travel information from the authors of Rough Guides, and sports analysis comes from *Four Four Two* magazine. Online Magic also drew on the experience of eminent sports writers for further commentary. Former sports editor of the Sunday Times, Chris Nawrat, recounts World Cup history from 1930 to the present day, while the news is taken from the Paris-based AFP news agency, (**www.afp.com/english**). Its Web pages are formatted to the specific requirements of WC98 and are delivered regularly via FTP.

handbook combines with looped South American backbeats.

The rest of the site is functional and clean rather than ground-breaking, and the navigation aids running down the left-hand side of the site are always visible. Sadly, it's not blindingly obvious what these navigation icons represent, so if you're using Netscape 3 or Internet Explorer 3 you'll need to keep your status bar open on your browser to see a text version of the shortcut. Netscape 4 users see a text message pop up above the icon. There's also a colour-coded site map if you get completely lost.

> "In Russell Gerrard, Online Magic has unearthed a Statto of epic proportions."

Like many sports sites, there's a statistical archive, but in Russell Gerrard, Online Magic has found a Statto of epic proportions. A lecturer at City University, the man has compiled match results from virtually every post-war international match. BUt the quality of the presentation of the information doesn't do it justice.

Promotion

To spread the word about the site, Online Magic produced a standalone search engine called Soccer Search (**www.soccersearch.com**). It lists over 100 sites and provides independent judgement from Webmasters, sports writers and journalists. "Only by getting these people on our side can we hope to fight the noise that's out there," said Jeffs. The WC98 site uses Muscat indexing and search technology, allowing searches of the whole site or specific sections. (**www.muscat.co.uk**).

Making sure all the content hangs together is a tough task. The designers spent a lot of time on the home page, which is one of the most graphics-rich visual feast of movement and sound you're likely to find on the Web. Imagery taken straight out of the Roy Liechtenstein pop culture

Plans for the future

As we went to press the site was still far from finished. By the time you read this the teams section of WC98 should be live. Online Magic hopes this will bring a real feel of community to the site. Online Magic is also looking into developing an audio and video section with the help of streaming multimedia specialist RealNetworks. Finally, and perhaps most interestingly, Jeffs mentions development of an "application which will allow those users without multimedia or plug-ins the ability to follow the matches live." We wait in eager anticipation.

On the down side...

There are features we'd have liked to see built into the site. A site like this is crying out for a smattering of intercative games for example. This type of feature has been exploited by a number of competing Web sites and it's a prominent characteristic of the Canon site (**http://sport.europe.canon.com**).

And despite the extensive use of technology, Shockwave is not used to great effect on the site, although plans are afoot to add a Shockwave Trivial Pursuit game to the site real soon now. im

HOW DID THEY DO THAT?

So how did Online Magic manage the translation of this site into five European languages?

The site has to handle five languages: English, French, German, Spanish and Italian. And as anyone who's used the Alta Vista translation service will know translation on the Web is not as easy as it looks (**www.digital.altavista.com**). Here's an example of Alta Vista's rather unusual interpretation of the language.

1 Take one Alta Vista translation tool (**http://babelfish.altavista.digital.com/cgi-bin/translate?**).

2 Input the phrase: "If England don't win the World Cup in France this year, I will eat my hat."

3 Mix in a French, German, Italian and Spanish translation.

4 Wait for results to appear and voila: "If England does not gain the cup of the world in east France year, to mangiar they mean it the protection of protection." Exactly!

This is precisely the reason why Online Magic decided to call in Polylang (**www.polylang.com**). The company specialises in localising content on the Web. Ronnie Halpern, business development manager at Polylang explains, "simple translations are fine in some cases – if you're dealing with legal or medical text, for example. The words are the same in any language so you can expect to get around a 70-80 per cent successful solution. But when you're dealing with conversation, it's hopeless."

Polylang has cut its teeth working with clients in the education and gaming sector where it's essential to acknowledge differing linguistics, idiomatic and cultural factors. "If we ignored these things on the WC98 site, things like humour and colloquialisms would become offensive or incomprehensible."

Off-line localisation is a fairly straightforward issue. Linguists at Polylang simply email text documents to the client. This method simply cannot be adopted for procedures on the Web as Halpern points out. "When the client tries to incorporate the text into his site there are immense problems with things like layouts, accents are all over the place and there are problems with the different length of text." Five hundred words in English can equal about 600 words in French and anywhere upto 700 in German.

"On top of that a Web site has an additional level of complexity because you're dealing with HTML. A single word in a hypertext button could be translated into three words in another language." How about this for an example: A button for the word 'Tram Stop' in English would be relatively small and simple. In German, the word Strassenbahnhaltestelle means you're looking at a button filling half the page.

Polylang gets around this by asking the client to grant it access to the development server. The linguists then upload their HTML document onto the server and if both sides are happy with the result they can then proceed. It is for this reason that Polylang employ native speakers who they then train up to use HTML editors like Frontpage.

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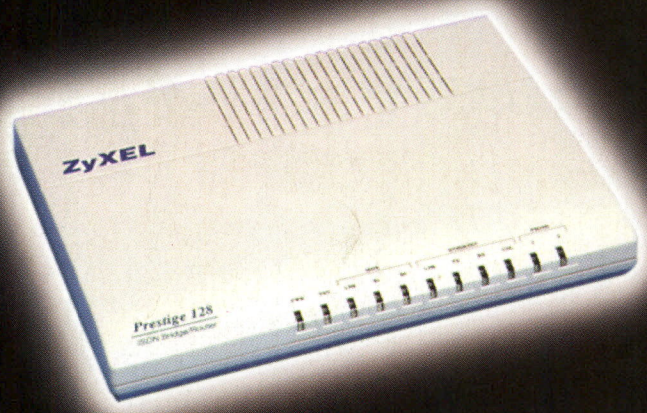

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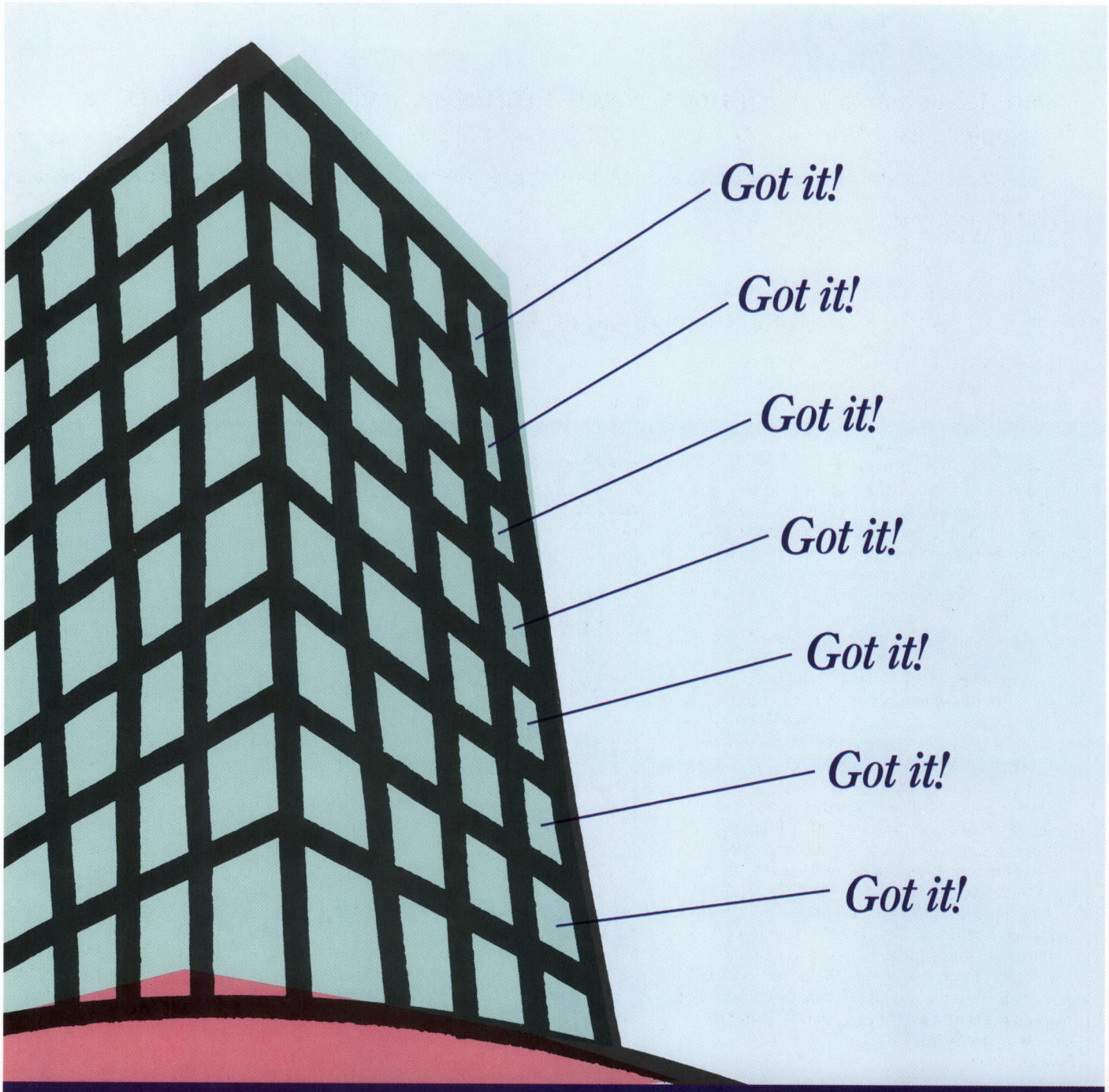

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Why not change the way we work?

Experts tell us how this month's top sites were built. Get the lowdown on the products the Webmasters use, the inside track on site budgets and tips on how to use the latest technologies

Private Eye

The infamous libel-collecting satirical rag comes over all multimedia in an unlikely corporate-backed venture

Take one irreverent inky and one sprawling corporate monolith, mix together and what have you got? The most unlikely of alliances, with *Private Eye* getting into bed with MSN to reproduce the stalwarts of Lord Gnome amid browser-draining online animation.

Developed for MSN by NoHo Digital, designers of the latest Bond site (**www.tnd.net**), it's truly an all-singing, all-dancing, all-huge-file downloading multimedia experience. All somewhat out of sync with the original, featuring fave characters and yet another (yawn) Slap-a-Spice rip-off.

The prototype was developed over a four-month period, and NoHo went over budget to complete the project. MSN ostensibly played a hands-off role, although cynics would suggest the whole site does rather showcase Microsoft's streaming application, Netshow.

"Cheap paper and basic fonts are essentially the branding of the magazine, but we felt this approach wouldn't work online," explains Paul Canty, production manager at NoHo. "We went to the other extreme. Our main concern was the fact that we couldn't cater for every platform, but we've managed 95 per cent."

The site is aimed mainly at UK and expat online users, presenting content in a format specific to the medium. NoHo talks of achieving a community feel, with users able to post messages on an MSN newsgroup linked direct to the site. So that's MSN's agenda, but what does Ian Hislop make of it all? "He's proactive, writing content specifically for the site, and is happy with its progress so far," advises Canty.

But overall something about this unlikely alliance doesn't feel quite right. Part of the Eye's charm is the inky production values and its satirical biting edge, which loses momentum given the downloading snooze times. Still, I suppose, unlike Slate it's still free.

David Atkinson

http://privateeye.uk.msn.com

Design ★★☆☆☆

Content ★★★☆☆

KEEP AN EYE OUT FOR...

Viz Comic www.viz.co.uk

The Onion www.theonion.com

The Drudge Report www.drudgereport.com

Brace yourself for a flood of in-jokes and animation to strain your browser

CLICK HERE

Mondex creates a novel way of navigating

Finding your way around a site can be confusing, even for the most experienced. But Mondex, a cash card company, has created a Web site with a browser within a browser. Designed and implemented by Thought Interactive, the site uses constantly visible Netscape and IE-like icons to navigate. Links to the site's sections replace the home, stop and reload icons. The browser option was chosen to make the site easier to use and to increase Mondex's branding, says Gabby Wilson, marketing director of Thought Interactive. "You can't get much stronger branding than having your own browser," she says.

Giles Anderson

www.mondex.co.uk

Radio 1 Newsbeat

A big-name news service that can be updated by the Net naïve

The twice-daily Newsbeat programme is the latest addition to BBC's online news service. The concept behind it, and the site (an offshoot of the main Radio 1 site), is to deliver pacey and accessible news with a human face, catering for the specific interests of the target 16-25 demographic.

"Our news agenda is different. Hence the headline section with the top Newsbeat stories of the day, while showbiz and music news is given a section of its own," explains Mike Hill, Newsbeat's editor.

The site was built in-house in three weeks, under the supervision of Radio 1's Webmaster, Jason Wilburn. Its design reflects Radio 1's current branding. The main challenge the team faced was creating the site's production system, as it's the Newsbeat journalists – not dedicated Web specialists – who update the site round the clock. Cutbacks, eh?

"It had to be simple enough to learn in 10 minutes, robust enough to allow for mistakes without crashing the site, and quick to use," says Hill. To achieve this, Wilburn designed a system that allowed journalists to use a simple browser and work their way through the system inputting headlines, story copy, audio and images. This interfaces with Microsoft Access as an online production database.

But overall the site looks dull and lacks the sense of excitement that comes across on air, due mainly to the poor design of the umbrella site it sits within. The good news is the entire Radio 1 Web site (including the Newsbeat bit) is being revamped shortly, with the help of designers Deep End. Hence, what you see at the moment is really in its beta stage. Thankfully.

David Atkinson

www.bbc.co.uk/radio1

Design ★★☆☆☆

Content ★★★☆☆

ON THE SAME WAVELENGTH...

The BBC's News Online www.bbc.co.uk/news

Independent radio news www.irn.co.uk

dotmusic www.dotmusic.com

HOW DO THEY DO THAT?

RealAudio streaming of Newsbeat's bulletins was difficult to implement, as Hill explains: "DJs can come to the news up to two minutes late sometimes, so we couldn't kick off the stream automatically on a timer and be sure we'd hit the top of a bulletin." So the production system means the journalists can record their broadcasts, top and tail them, encode them, and FTP them within two minutes of finishing the broadcast.

THE BUILDER

He dons his hard hat, shuns his fried breakfast and goes behind the scenes to bring us the gossip from the Web design industry

Security shenanigans

Site hacking is back in the news and seems rife at a well-known defence company. An HTML-literate employee hacked into the military aircraft supplier's site to post a tongue-in-cheek, two-page, two-fingered multiple choice questionnaire for customers. Questions include:

How did you first become aware of our product?

a) heard loud noise, looked up
b) recommended by friend/relative/ally
c) political lobbying by manufacturer
d) attacked by one

What is your occupation?

a) homemaker
b) tyrant
c) eccentric billionaire
d) middle management

...which allegedly did little to endear him to the site's Web master. Can't see what the problem was myself. I don't know which security system was installed, but I find you can't beat the double Yale locks, chain and key under the mat routine to keep out pesky intruders.

More hacking capers

More alarming, environmentally friendly GreenNet became a victim of an eco-terrorist hack attack. "They sneaked in and took out the operating systems," I overheard a spokesman say while I was trying to rehang the front door. GreenNet was forced to shut down its site while rewiring took place. The apparently motiveless attack followed a similar break-in at a Canadian partner's Web site. No data was lost, but GreenNet's now working on making its systems more secure. I understand Nick Ross is being primed for a *Crimewatch* reconstruction.

www.gn.apc.org

Irish Times Bus(t) up

The *Irish Times* made something of a faux pas when it took unauthorised images from The Irish Bus Site and posted them on its own home hage. You don't mess with these guys – all text and photos are strictly copyrighted (the site tells you so),

Where to Eat

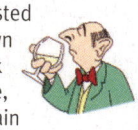
Looking for lunch? Dying for dinner? Let this site take your order

For the London-dwelling bon viveur, making the choice between the latest Moroccan and the new microbrewery mash house is enough to devil anyone's kidneys. Step forward Where To Eat, the database for diners who can't make decisions. But just what sets this latest offering apart?

According to Richard Gardner, designer with Slideshow (**www.slideshow.co.uk**), who master-minded the project in his spare time, the site is about simplicity, search and speed. "The design of the site portrays a fun and casual image as well as giving visitors clear and informative content, without long download times. The simple layout and design make it compatible with most browsers, and fast for surfers using a low bandwidth connection."

The main challenge Slideshow faced was creating the restaurant database and HTML template, merging the two and cutting the document into 3,500 files. It was time-consuming, but Slideshow managed to keep development costs down to £1,500.

Reviews are submitted by the public, and restaurateurs can submit recipes in return for free ads. The site is hosted on Slideshow's own server and all work was done in-house, the aim being to gain experience and place them in a strong position to corner the market on similar projects.



So, given it's still early days, what will they be serving up in the future? "It's our intention to keep this site as fresh and as useful as possible by expanding to cover a wider area and provide more detailed listings," says Gardner.

David Atkinson

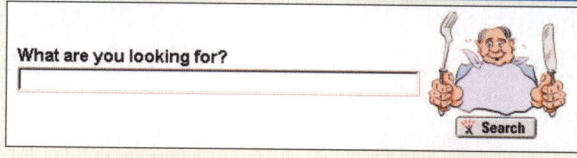
www.where-to-eat.co.uk/

Design ★★☆☆☆
Content ★★★★☆

ALSO ON THE MENU...

Dining pages
www.diningpages.com
Entertainment UK
www.entertainnet.co.uk
Wine & Dine
www.winedine.co.uk

HOW DO THEY DO THAT?



The most useful feature of Where To Eat is the search facility which uses Excite for Web servers, a tool Slideshow downloaded free from www.exite.com/navigate. They chose it for its speed, as it creates a summary file which is then used for the search. So if you type in 'Thai in London N1', it delivers a response within two seconds.

Douglas Adams' Starship Titanic

How do you put online games onto the Web? Get Douglas Adams at the wheel

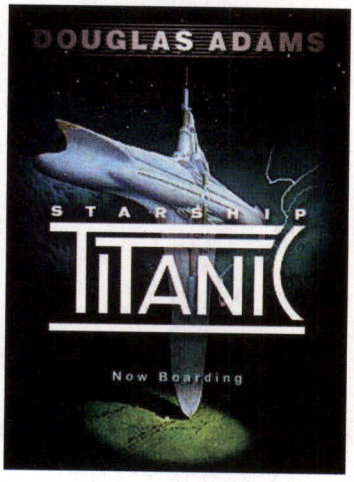
Titanic fever may have gripped this year's Oscars, but will the site of the game of the star attraction at this year's Milia show, Starship Titanic, also be able to clean up?

Designed by Douglas Adams' new media company, Digital Village, the site was launched as a taster for the game itself. According to Adams, the main challenge was to reflect the gameplay without detracting from the final product. "The game is graphic-rich and instinctive in look," explains the man sci-fi freaks love to love. It's made up of good old-fashioned raw HTML with no plug-ins, no frames and no mess. "The maximum interactivity most sites offer is a link to leave the page," he adds. "Each section of this site is a destination in itself."

Adams likens the site to a satirical e-zine on the world of travel where writing takes precedence over design. "Words are king here, which is something most sites neglect," he says. "You hear a lot about use of technology on the Web, but very little about the old art of writing. This site makes for quite a refreshing change."

But overall it's unclear what exactly this site's aim is – a covert promotional plug for the game, or a mini-novella in its own right. It's notable for the way it taps into the rich vein of irreverent humour common to all of Adams' novels, but despite its charm, it's a site that, one year from now, only die-hard Adams fans will keep afloat.

David Atkinson



www.starshiptitanic.com
Design ★☆☆☆☆
Content ★★★☆☆

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www.arcfan.demon.co.uk/sf/clubs/zz9
The Digital Village
www.tdv.com
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http://ourworld.compuserve.com/homepages/bj_/realhhg.htm

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but the *Irish Times* just went ahead and took them. Of course, they then owned up, removed the offending item and agreed rather meekly that they really shouldn't have done that.
www.newstride.com/bus
www.irish-times.com

In a spin

Since Mi2g installed the super-greased, 45rpm revolving doors at its offices, there's been a flurry of arrivals and departures. This month, four people moved in and two moved out, one of them to Thailand. That's some exit.
www.mi2g.com

Hit and hit again

The Urban75 site, famed for Slap-a-Spice-Girl, has now had over two million hits and boasts a logfile of half a gigabyte – so big in fact, that freshly-groomed Web master Mike Slocombe couldn't be bothered to download it.
www.urban75.com

On my turf

Web sites are trying to put me out of business, I swear. Only last week a new site, Rugby Joinery (**www.rugby-joinery.co.uk**) started offering DIY tips online. For free. I ask you, how's an honest man supposed to feed and clothe his family? And the Alta Vista search engine (**www.altavista.digital.com**), recently voted the number one search engine for user loyalty and accuracy of results, produced 1,521,990 documents when I searched for 'the builder'. That's a lot of builders. Luckily, there's only one of me.

The Builder picks up his trousers, then picks up the pieces left behind by the industry cowboys. Overheard a rumour, bursting to babble or gasping to gas? Email The Builder in strictest confidence at **thebuilder@internet.emap.com**

Runners World

Fast downloads and easy navigation make this site a real runner

Pardon the pun, but the biggest problem faced by Runners World's designers Datanet was preventing this site from running away with itself. "The client has so many plans for the future of the site that half the battle was to narrow everything down," says Nick Fey of Datanet, whose most famous Web offering to date has been SportsZine UK.

The client is Phil Talbot, who runs (sorry!) north London shop Runner's World, which specialises in recommending shoes that exactly match the way your foot moves. It was important that this customer care and attention to detail was mirrored on the Web, despite its rather impersonal nature. Hence a shoe-finder section coupled with a customer service inquiry form, for runners looking for advice.

Shoes can be sold online through a secure ordering system, but Phil was keen to build an online community rather than simply create a place to sell goods. "We're planning more training programmes, greater interaction and race results as well as events news," he says.

Three well-spent development months have produced a site that uses relevant graphics, easy navigation and currently boasts 2,000 user sessions a month.
Steve Masters

www.runnersworld.ltd.uk
Design ★★★★☆
Content ★★★★☆

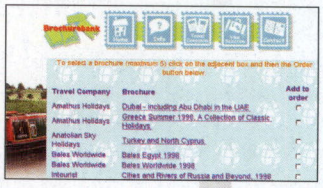
ALSO IN THE RUNNING
SportsZine UK **www.sportszineuk.co.uk**
Runners World **www.runnersworld.com**
New Balance Cyber Park
www.newbalance.com

HOW DO THEY DO THAT?

Unsurprisingly in a runners' site, one of Datanet's primary aims was to get fast download times. Images are kept to a minimum and then manipulated in Photoshop using filters. Datanet's Nick Fey reduced the number of colours to speed up the download times yet more. "I use JPEGs for photographic-based images because the compression is better, unless the background needs to be transparent. Then I use GIF89as in order to get that transparency."

CLICK HERE

Brochurebank shows the smart way to get people to register



Yell has launched yet another service, but registering for this one is a breeze. By using QAS Systems' QuickAddress software, you need only enter your postcode and house number and up pops your full address. Telemarketing agencies have been using this system for ages, but it's nice to see it being used on a Web site. The site, Brochurebank, is the result of a collaboration with BP Travel Trade Services and lets you order holiday brochures. Search by holiday type, from over 160 destinations or by tour operator, and request up to five brochures, which are then sent out to you for free.
www.brochurebank.co.uk

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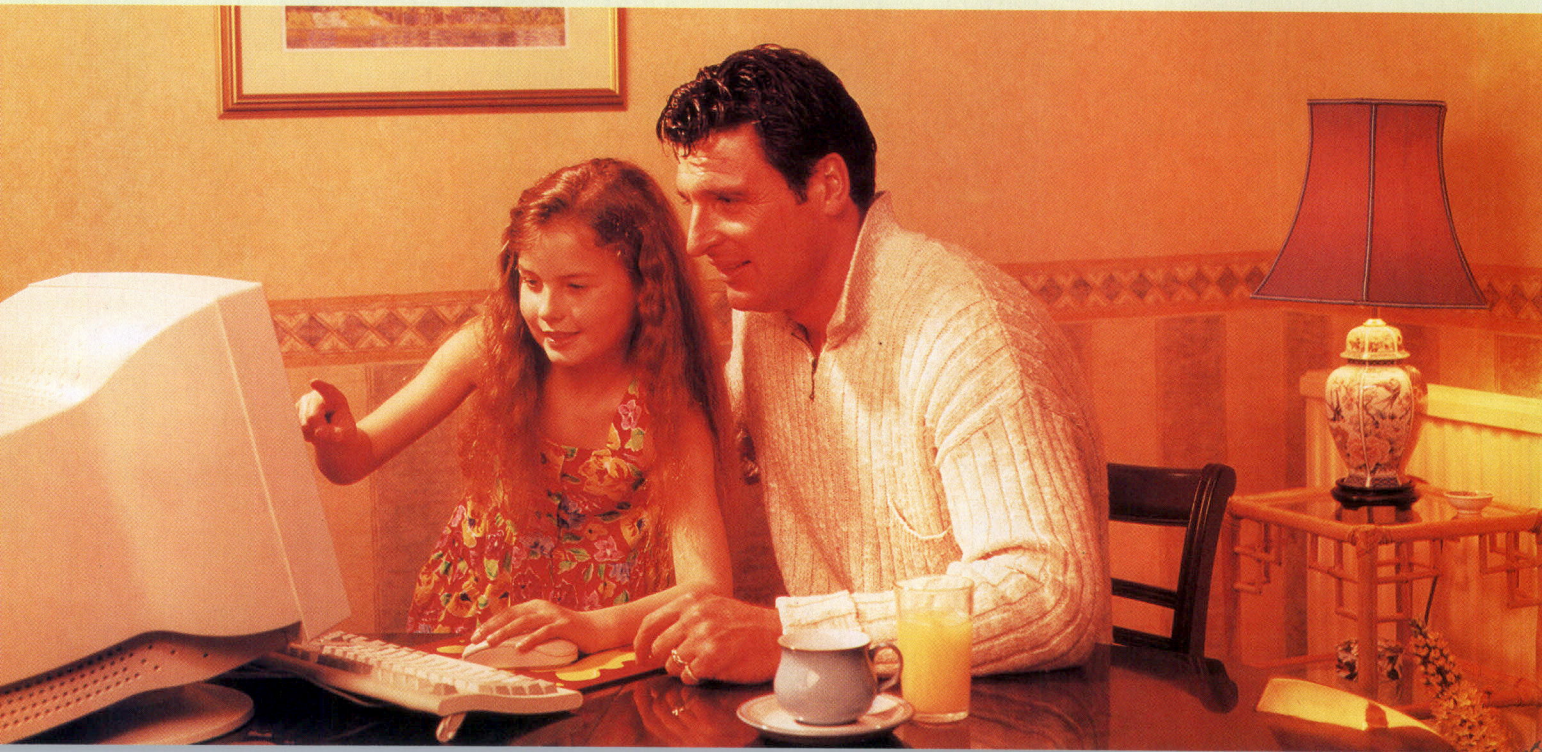

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Demon	✗	✗	✓	£132.50	£132.50	£132.50	£132.50
Virgin	✗	✓	✗	£122.45	£122.45	£122.45	£122.45
Pipex Digital	✓	✗	✗	£151.75	£151.75	£151.75	£151.75
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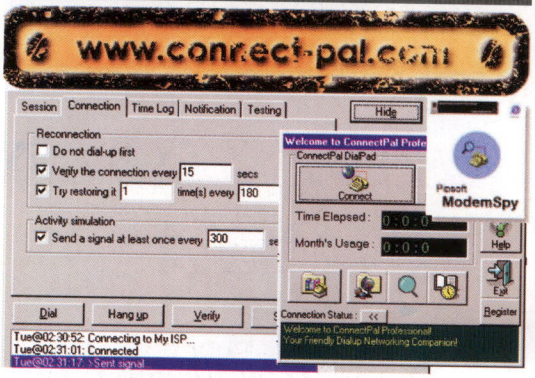


Top 10 call loggers

For now, we're stuck with timed calls to the Net, so try these handy utilities to track your time online

ModemSpy

www.pipsoft.com/products/modemspy

Your whole family can have its own call log books. What's more 10 per cent of the profit from sales goes to the NSPCC.

ConnectPal Professional

www.connect-pal.com

Sits in your Windows System Tray waiting to redial on failed connections, saving passwords and monitoring the costs.

PFT Internet Timer

http://home2.swipnet.se/~w-22385/it/index.html

Select how long you want to be connected per session, day or month.

Rascal

http://www.basta.com/ProdRascal.htm

Tracks your online time as well as picking up lost connections.

Advanced Dialer

www.pysoft.com/

Generates frightening charts of how much money you've actually spent on phone bills.

Aide Onlineometer

ftp.demon.co.uk

Tariff comparisons and monthly cost estimates. Warns you when your phone bill looks like going through the roof.

BillSaver

ftp://sunsite.doc.ic.ac.uk/packages/simtelnet

Keeps you to a monthly phone bill limit by issuing a warning every time you stay online longer than you can afford.

Connect Time Monitor

ftp.radio-msu.net/mirror/Coast/win3

Freeware online time tracker that monitors multiple services.

Interlog

http://home6.inet.tele.dk/brianp/interlog.zip

Calculates your bill based on the Windows modemlog.txt.

Time Wizard

www.epsoft.com

Chart how much time you've spent online with this efficient time-tracking utility complete with pie and Gantt charts.

ThingWorld

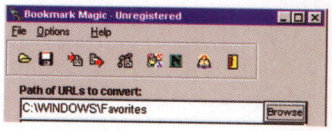
We just couldn't resist a whole collection of tools called Thing. Download a free trial of ThingMaker, an object-oriented authoring environment, and you too could be building your own Things. The easy-to-use interface means just about anyone can build Web animations.

ThingWorld

Price $99 (around £62)
Platforms Windows 95/NT
Download size 2.8Mb
www.thingworld.com/enter.html

Bookmark Magic

Sorts out taking bookmarks between Navigator and Internet Explorer. This little utility allows you to change your Bookmarks into Favorites and vice versa.



Price $20 (around £14)
Platforms Windows 95/NT
Download size 819Kb
www.cyber-matrix.com

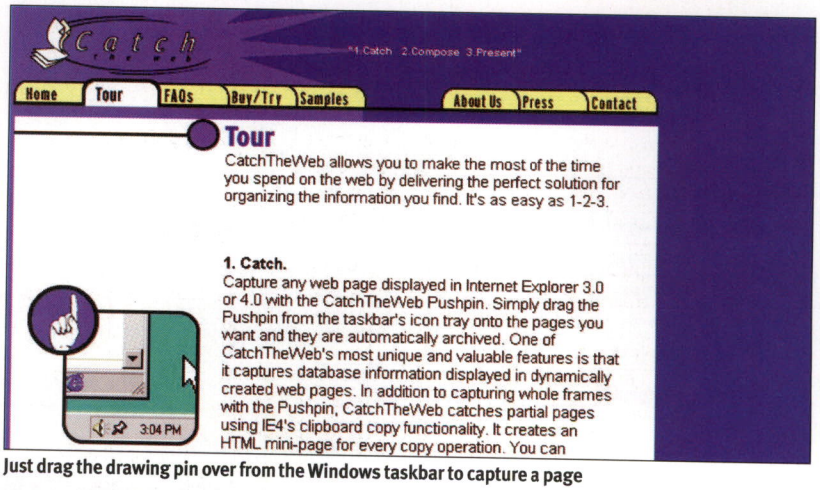
Flash 3

Visit the Macromedia site and you can download the free Flash 3 beta. Full of Netscape-like public spirit, Macromedia has also made the Flash format available publicly for developers.
Price Free
Platforms Windows 95/NT, Mac
Download size 178Kb
www.macromedia.com

Ferrets

You might have heard of WebFerret, but there's a veritable plethora of other ferrets designed to help you search out information on the Net. WebFerret deals with digging data from Web sites, but also worth downloading on 14-day free trial are EmailFerret, FileFerret, IRCFerret, PhoneFerret and News Ferret. Each is designed to unearth specific information: an email address, file, chat channel or newsgroup. While you're there, you might also want to check out the new InfoFerretPRO, FerretSoft's newest Net research tool.

Price Full products start at $13.95 (around £8.70)
Platforms Windows 95/NT
Download size All under 1Mb
www.ferretsoft.com/netferret/download.htm



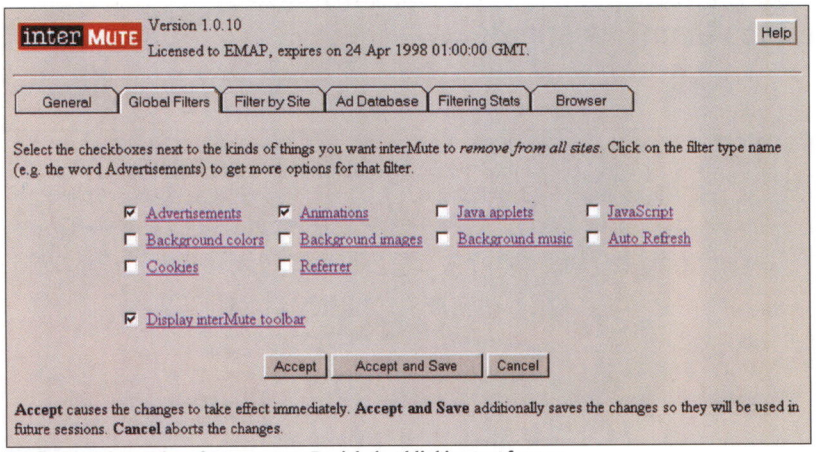
Just drag the drawing pin over from the Windows taskbar to capture a page

CatchtheWeb – a new way of surfing

CatchTheWeb lets you grab and archive Web pages and then create a presentation of the results. You can capture any Web page displayed in IE3 or 4 and have it automatically archived. You can also pick up parts of the page using IE 4's clipboard. Once you've selected your pages, you can view them, re-order them and from there make up a presentation. These presentations take the form of a slideshow that can be viewed in any browser.
Price $39.95 (around £25)
Platforms Windows 95/NT
Download size 2Mb
www.catchtheweb.com

sted

bring you the products that really are worth downloading. shouldn't be without



Configuring the settings for Intermute. Banish that blinking text forever

A quieter Web with Intermute

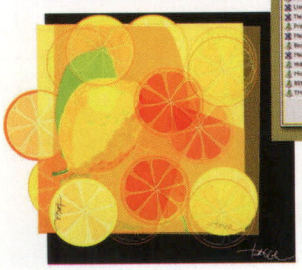
The Web is a noisy place – banner ads, junk mail, animated GIFs and, worst of all, blinking text all compete for your attention. This handy utility, developed by folks from MIT (the Massachussets Institute of Technology) will block out all that unecessary Net blether. Ads, animations, cookies, background music, Java and JavaScript can all be turned off on a site by site basis or on all sites you visit. Should make for a faster and less stressful Web experience.

Price $19.95 (around £12.50)
Platforms Unix, Mac, Windows 95/NT
Download size 745Kb
www.intermute.com

LightningDraw/Web

Lari Software's site is worth a visit. LightningDraw/Web, a Web graphics creation package, is available for download, and by the time you read this there should also be a 30-day trial version of Electrifier Pro, a program for building streaming Web multimedia. Lightning builds QuickTime 3 vector graphics, keeps file sizes down and handles millions of colours.

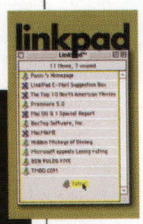
Price $99 (around £61)
Platform Mac
Download size 2.4Mb
www.larisoftware.com



LinkPad

One for Mac users. LinkPad is a safe haven for all those bookmarks you plan to sort out... soon (honestly). It's a home for all those displaced links. Just drag a link from your browser to LinkPad and drag it back out when you want to view the page.

Price Free
Platform Mac
Download size 143Kb
www.panic.com/linkpad



NetActivity vMail 2

Using this email add-on you can send and receive sound and video clips to any MIME compliant email package. The program uses Apple's QuickTime 3.0 technology to keep down file sizes.

Price $35 (around £21.80)
Platforms Mac, Windows 95/NT
Download size 1.7Mb
www.netactivity.com/Pages/products.html

WebBoard 3.0

O'Reilly's WebBoard is a discussion and chat server. It's heavy duty, and can handle a 1,000 user IRC service, but there's still a free 30-day trial version. It also claims to scale up easily, dependent on the volume of users.

Price $699 (around £440)
Platforms Windows 95/NT
Download size 8.5Mb
www.webboard.oreilly.com

ON THE CD You'll find most of these hot downloads on our cover CD

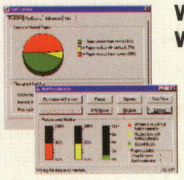
In Tried & Tested

Internet Magazine **is committed to bringing you the best and most authoritative reviews in the Internet industry. Every month we test and rate the most important new Internet products. If you're making a buying decision or doing a bit of pre-purchase research, the following pages are not to be missed.**

In Tried & Tested you'll find the latest news on just-announced products, hard-hitting reviews of key product releases and comprehensive Labs tests.

On our Web site at www.internet-magazine.com/reviews/welcome.html you'll find a database of all the reviews from the last year.

Key reviews for June

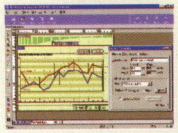


We'd all like a faster Net and the Web accelerators reviewed in this month's Labs Test claim to speed up browsing by as much as 50 per cent. The Labs team puts them to the test to see whether products such as Net Accelerator and Surf Express really do make browsing a pleasanter experience. You'll also find demo versions of most of these products on this month's cover CD.
See page 86

Find out how Emblaze Web Charger manages to squash down the size of your Web images.
See page 95

No wires draped across the office, no bizarre connectors – Breezecom's wireless Net access brings you a truly fuss-free Web experience. You need never know you're going over the airways.
See page 96

Nokia's CardPhone is a nifty gadget. It's a GSM mobile phone on a PC card. It's a good option for anybody wanting to make data calls or send faxes on the move.
See page 97



NetObject's upgrade to its Fusion Web development software offers great support for Dynamic HTML and improved page design options. Shame about the documentation though.
See page 98

Star Ratings

★★★★★ Must buy
★★★★☆ Should buy
★★★☆☆ Could buy
★★☆☆☆ Poor buy
★☆☆☆☆ Don't buy

Web Accelerators
speeding up the Web

Can anything make browsing the Web faster? These products claim they can. Roger Gann and the Internet Magazine Labs team investigate...

You can forget all the high-falutin promises of future mega-bandwidth connectivity to the Internet. Right now most of us use common-or-garden phone lines and modems to access the Net. And despite the much-hyped promise of 56K modems, access speeds are still painfully slow. The 'World Wide Wait' has ceased to be a joke – for most of us, it's a painful reality. What we all could do with is a quick and simple speed boost.

For some time now, there have been a number of software cures for our connection speed woes. Dubbed Web accelerators, these are add-ons for our Web browsers that make more efficient use of Internet bandwidth allowing pages to almost leap onto the screen. The idea of these products is to keep your modem one step ahead of you, anticipating your next move. The resulting speed boost can be as high as 66 percent – or so they claim.

How they work

Outwardly all the Web accelerators work in much the same way. They use a technique called pre-fetching to store pages in their cache while you go about your browsing. This means the pages are downloaded before you want to view them and when you do, they're already in the cache. There are two pre-fetching techniques used by these products: link-based and history-based.

Link-based accelerators

Most of the Web accelerators work on a link-based technology. When your browser loads a Web page, the accelerator simply hits each of the links on that page and downloads those pages in the background. That way, when you click your next link, your browser needs only to load it from your hard disk's cache rather han going through your modem and onto the Net. A good example of a link-based accelerator is WebEarly.

It's worth mentioning that requests from poorly designed link-based accelerators can actually slow down normal requests from your browser. For example, NetAccelerator can actually slow down requests from Netscape Navigator 3.0.

History-based accelerators

The history-based approach is more sophisticated. Many of us are creatures of habit and tend to visit the same sites each time we log on. Here, a targeted approach can be more efficient then the sledge-hammer like link- based technique.

History-based accelerators log those sites you frequently visit and pre-fetch only those sites. As they're more selective, you don't waste time and bandwidth downloading pages you'll never look at. The downside is that new sites won't get the benefit of that acceleration.

Web accelerators speed up access by anticipating your next click and downloading sites in advance, but widespread use could end up clogging up the Net

Using proxy servers

Many of the accelerators we looked at also use a local proxy server which essentially acts as a cache that sits between your browser and your connection to the Internet. Some service providers run full-blown proxy servers which act in precisely the same way to speed up access to popular sites for all their users.

Support for proxy servers do give these accelerators more flexibility. For example, Surf Express stores the DNS information for the URLs you visit, so your browser doesn't have to make a trip to the Internet to find the site addresses. The proxy server also allows Surf Express to use its own cache of Web pages, rather than the standard, slower browser cache.

As ever, there are problems with proxy caches. If your system crashes it's possible you might not be able to get your browser to work again without the Web accelerator running at the same time. And tweaking your browser settings to turn off proxy server support may be a job too technical for many surfers.

If you're like most of us, you've already adjusted your browsing habits to accommodate your connection. Better Web accelerators work with those changes, rather than against them.

Web Accelerators compared

Manufacturer	Product	Price	Platforms	Web browsers supported	Smart accelerators*	History-based
Connectix	Surf Express	£35	Windows 95, NT 4.0,Mac	IE/Navigator	✔	✔
Go Ahead	Got It!	£12	Windows 95	IE/Navigator	✘	✘
GoTo	WebEarly	£15.50	Windows 95, NT	IE/Navigator/Opera/Mosaic	Semi	✘
IMSI	Net Accelerator	£34.99	Windows 95	IE/Navigator	✘	✘
PeakSoft	NetMagnet	£39.99	Windows 95, NT 4.0	IE/Navigator	✔	✘
Web 3000	NetSonic	Free	Windows 95	IE/Navigator/Opera	✔	✘

A good accelerator will allow you to pre-fetch text only, so you can browse without images. You should also be able to stay at one site, ignoring links to other places you may not want to go.

Downsides

When you're getting something for nothing there's bound to be drawbacks and this is true of Web accelerators. It's important to understand that they all behave like caches and so won't accelerate access times the first time you visit a site. Only when you return to that site will the page be pulled from the cache rather than waiting for the Web server to deliver it over the wire. So if your pattern of Web browsing largely involves flitting from new site to new site, these accelerators won't be able to work their magic.

Also these Web accelerators expect you to open a page and read it for say 30 seconds. This gives them enough time to download the links on that page into the cache in case you might need them. If you click on a number of links in quick succession the pages won't have been downloaded and so won't be in the cache.

Another gotcha is speed of access – the slower your Internet access, the more impressive the speed gains you'll get from Web accelerators. So, if you're lucky enough to have ISDN or a permanent connection to the Internet, the speed gains won't be quite so impressive. Who needs caching if the pages are coming down the wire at a decent lick?

The moral high ground

There's actually a moral dimension to the use of Web accelerators. Because they're ruthlessly efficient in their use of bandwidth, these automatons have the potential to soak up that bandwidth like blotting paper. It's fine when only a few people are using these utilities but if everybody used them Web servers would be overwhelmed by their everyday use, blitzed with a barrage of automated calls. It seems the everyday running of the Web is dependent on our inefficient, lumpy accessing patterns, it's this that allows plenty of surfers a fair crack of the Web whip.

However, if everyone were to run Web accelerators, every connection would be in constant use – quickly sucking up all of a service providers' available bandwidth, overwhelming content site servers with traffic, and slowing the whole Net down to a snail's pace. Quite the opposite of what they're supposed to do. When PeakJet was originally launched for example, many Web sites expressed concerns over its potential to swamp them with a barrage of page requests and some sites actually discouraged its use.

And it isn't just a question of bandwidth use either. Advertisers on the Web like to think there's a human being reading their ads. How can they be sure of this if pages are downloaded wholesale by these accelerators, pages which might not even get read?

One final issue is the fact that many small Web sites are charged on a traffic/usage basis by the service provider that hosts them. Hits from a few Web accelerators could easily put up their rent big time.

So, while Web accelerators maybe good for the individual, their widespread use poses some serious questions for the Internet community as a whole. If you feel you really must use one, the best compromise is to use an intelligent history-based accelerator.

The verdict

Over the next three pages we've tested the top six Web accelerators. However for those of you who can't bear the excitement of working your way through to the end of the article before finding the winning product, here's a summary of the top performers.

Key: Smart browsing * – this entry tells you if the products intelligently pick the next link or just blindly fetch all links on that page

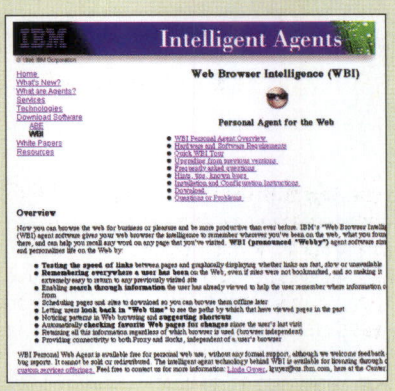
Link-based	Proxy Server support	Other features	Star Ratings
✔	✘	Caches DNS	★★★★★
✔	✔	Off line browsing	★★★★½
✔	✔		★★★½
✔	✘		★★★½
✔	✔	Page management	★★★★½
✔	✘		★★★★½

Browser turbo chargers

Try out the following free add-ons for your Web browser they can really make a difference to the speed of your browsing

IBM's Web Browser Intelligence

This free utility, the latest in so-called intelligent agent software, is called WBI, short for Web Browser Intelligence (pronounced Webby). The software can remember Net usage patterns – what sites are visited. The product can also tell you how fast a Web site is going to be, whether it's up and running and the quality of the links.

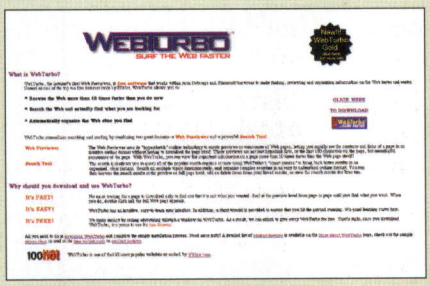


You can also customise WBI so it goes away and captures particular Web sites overnight. The program can also be set up to monitor shopping patterns, check sites for updates and and to alert customers about new products.

www.networking.ibm.com/wbi/wbisoft.htm

WebTurbo – mapping Web sites

WebTurbo is a free add-on for Internet Explorer. Once installed, a WebTurbo button appears on your IE toolbar. Click on that button and up pops a separate pane on the left where you can preview Web sites. Enter a Web address and you can check out an expandable outline of the entire site with information on each page, pop-up descriptions, and the ability to click through to any section. So at a glance you can see the layout of a site without having to wander aimlessly from page to page.



www.webturbo.com

Choosing a best buy out of this round-up of Web accelerators proved to be tricky, largely because of the moral dimension.

If your name is Jack (as in 'I'm alright'), the product for you is probably Peak NetMagnet or its simpler sibling, PeakJet. This product unleashes a blitz of page calls on every site you visit and so can make quite a dramatic difference to access speeds – you'll click on the link and the chances are that page will already be stored in the cache. It's not exactly a polished product but it is quick. The problem is, if everyone used NetMagnet, the World Wide Wait would actually get worse, not better.

We also recommend Surf Express, which is considerably more Net-friendly. And it's no slouch. Of the two, we'd be prepared to sacrifice some speed for a more Net-friendly product. We recommend Surf Express.

The remainder of the products all provided moderately good acceleration. Both Got It! and NetSonic delivered tangible speed benefits – the off-line browsing offered by Got It! is a bonus. The runt of the pack is probably Net Accelerator which is relatively unsophisticated and doesn't work so well with Navigator.

ON THE CD Try out the Web accelerators reviewed here by using the demo versions on this month's cover CD

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when our free email and web forwarding does the same, seamlessly.

We won't tempt you with free megabytes

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but our Global Registration will make sure that it is seen around the world.

We won't even try to sell you training

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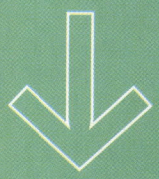

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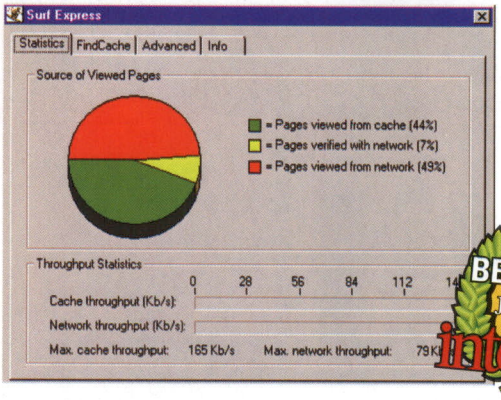


The performance results for Surf Express shown here reveal that 44 per cent of the pages accessed have been pulled from the cache

Surf Express V.1.11

Mac users are not left out with this intelligent Net-friendly package

Surf Express was one of the few products tested that supports Macs as well as those using Windows 95 and NT. Surf Express is a smart Web accelerator, it only pre-fetches pages of sites you've visited previously or access frequently.

Install Surf Express version 1.0 and it automatically finds and configures your browser and adds itself to your system's start-up folder. From then on, Surf Express runs transparently in the background.

The first time Surf Express visits a site, it stores a record of that site in its cache database, there's no speed gain this time round. Subsequent visits, however, proved extremely fast.

Doing tricky stuff like adjusting the proxy server settings is a matter of a few quick mouse clicks. A 1Mb upgrade to version 1.11 – available from the Connectix Web site – correctly resets the browser not to use a proxy server if you exit Surf Express. And like all the other Web accelerators, Surf Express is available as a free trial download.

In common with other Web accelerators, Surf Express works as a proxy server, which allows it to tune up performance significantly. To do this, it indexes the pages it stores on disk in its own highly compressed cache.

Unlike normal caches, which store each page as a separate file, Surf Express stores all downloaded pages in a single database file for fast access and searching. You can search for text strings in cached pages and it lets you click on a list of search hits to open a cached page in the browser.

Cached pages render up to six times faster than the standard browser cache and the intuitive Find Cache searching mechanism makes it far easier to manipulate those cached pages.

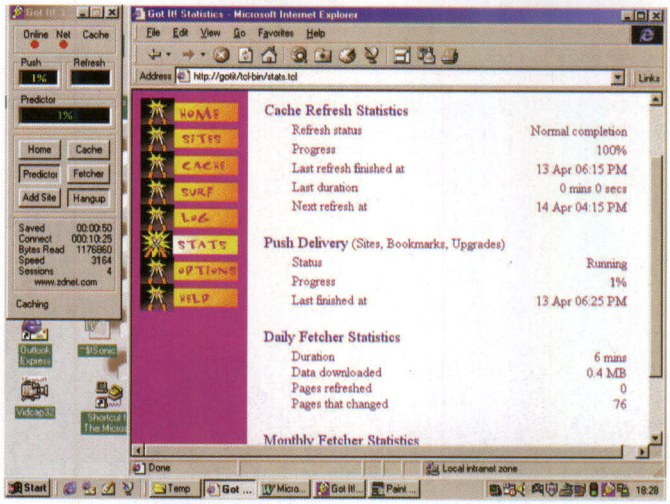
Surf Express further boosts access speeds by caching domain name information, this means you don't have to take a trip to the server every time a page is requested.

Unlike link-based accelerators, such as Peak.Jet and Got It!, Surf Express doesn't hit every link on a page. As a result the product doesn't excel if you roam the Web at random, but its responsive cache and high accuracy level make it a good choice for those with regular surfing haunts. Its targeted acceleration is also a much more Net-friendly approach.

★★★★½

Surf Express
Price *£35*
Pros *Fast, targeted, look-ahead cache searching; clever proxy server*
Cons *Little help for link-based browsing*
Contact *Computers Unlimited*
Phone *(0181) 358 5857*
www.connectix.com

GO AHEAD



Got It! gives you an excellent selection of performance stats

Got It! v3.0.3

Speed benefits are not dramatic but the off-line browser makes it worth a look

Got It! is a link-based accelerator with the added benefit of off-line browsing capabilities. Got It! not only pre-fetches pages but will also alert you when selected remote sites change and will download subscribed-to sites at specified intervals.

While the program is easy enough to use once you're up and running, installation could be better – the HTML forms-based set up is not as good as the native code programs used by the other accelerators.

The program uses a browser-based interface to carry out the majority of its tasks. Like many of its rivals, Got It! uses the proxy server technique to store downloaded pages until they're needed. Mercifully, Got It! is well-behaved and won't leave your browser unusable after a system crash. Instead, it restores the original proxy settings when you reboot your machine.

Unlike many of its rivals, Got It! gives you lots of info on how it's performing. You simply type Gotit into the address box of your browser and a set of News pages pop up. This will give you facts and figures on how efficiently the product is working.

One nice feature is the amount of control you can exert over what Got It! downloads – you can, for example, specify that no GIF files should be pre-fetched.

Although Got It! isn't as smart as some of the other accelerators on test it does emulate the more targeted approach of Surf Express by including your bookmarks in its list of URLs to check.

As with all the Web accelerators reviewed, Got It! doesn't have much of an interface. The set up program adds a simple icon to the Windows 95 Taskbar. Clicking on this loads a small tool-bar which displays success rates; plus buttons that can initiate a Net connection, open Got It!'s advanced options, start downloads of subscribed pages, and open lists of cached files.

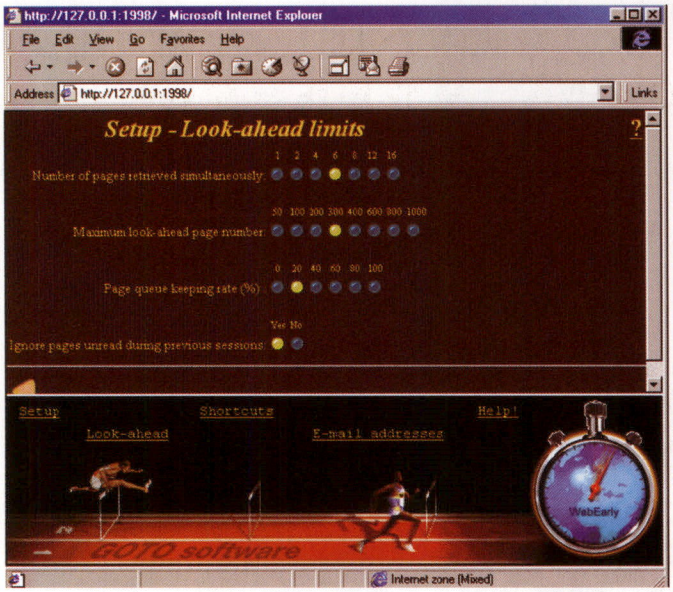
The Fetch option lets you download entire Web sites for off-line browsing. You can have the Fetcher running in the background to update your cache of Web data whenever you're online.

Overall, Got It! provided modest but not stellar speed gains. However this lack of performance is party compensated for by its offline browsing capabilities.

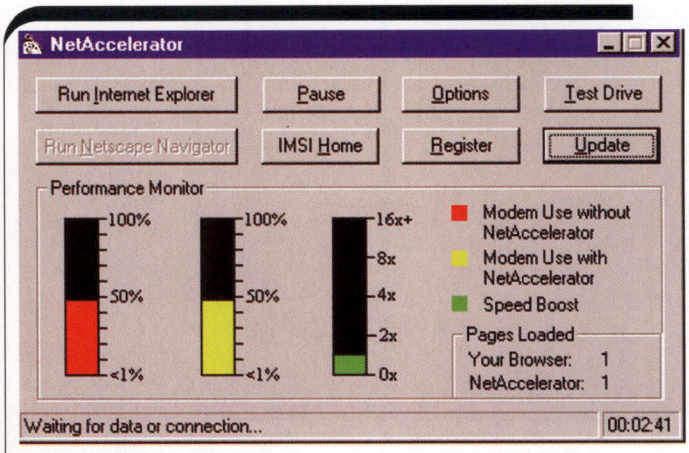
★★★★★

Got It!
Price *$19.95 (around £12)*
Pros *Full-featured offline browser; automatic online updates, good performance stats*
Cons *Average performance*
Contact *Go Ahead Software*
Phone *(001) 415 882 1900*
www.goahead.com/gotit/index.htm

GOTO



Lots of configuration options make WebEarly a flexible solution, if a little slow



Despite reasonable performance results with other browsers, NetAccelerator doesn't like working with Navigator

WebEarly

A basic browser-style interface for this average link-based accelerator

It might sound like a punishment from an angry parent, but GoTo WebEarly is in fact a basic link-based crawler, lacking in features and the sophistication found in other Web accelerators. It uses the proxy server technique to pre-fetch links and store them locally, calling them up as they're needed. It also has a number of interesting options, one of which allows you to tailor pre-fetching to specific file types so you can pre-load sound files but not graphics for example.

While accelerators like NetMagnet allow you to fetch text only, WebEarly takes this customisation option further. From a simple, browser-based interface, you can select or deselect any file type, based on its extension. And it's easy to add new file types to the list. So, WebEarly is highly configurable and, unusually, it works with more than just Navigator and Internet Explorer – it also supports NCSA Mosaic and Opera browsers.

To revisit a site, you simply type a few letters from anywhere in the site's name. A list of page names which include the string pop up in a separate window and you can select the page you want from this list. Email addresses are listed in another window, sorted by the date you visited the pages that contained them.

Although WebEarly isn't smart, it has one clever option – it can ignore unvisited pages. On your first visit to a page, WebEarly crawls every link. However, the next time you visit the page WebEarly will, if you tell it to, pre-fetch only previously visited pages.

On the down side, WebEarly's rather spartan interface doesn't tell you much about what's going on or what it's doing. Another irritation was the shareware nag screen – every time it found a link it could pull from its cache, it pops up a screen encouraging you to register.

There are interesting features lurking in there though. For example you can turn off adverts. However this only works up to a point, on certain pages this feature also removed vital elements like navigation buttons. WebEarly is an average product, there are faster accelerators on the market.

★★★☆☆

WebEarly
Price *$24.95 (around £15.50)*
Pros *Highly configurable, some interesting features*
Cons *Average performer*
Contact *GoTo Software*
Phone *(0033) 320 665 500*
www.goto.com

NetAccelerator Deluxe

An easy to use package, let down by poor support for Navigator

IMSI hasn't wasted space on the NetAccelerator CD filling it up with the Internet Explorer 4 and Navigator 4 browsers. And because this is the Deluxe version, you also get half a dozen Internet utilities thrown in. These include a site searching and indexing aid (WebSleuth Lite), an Internet anti-virus package, a file compressor (WinPack 32 Deluxe), site accessing, newsgroup and bookmarking utilities.

If it's ease of use you're looking for then NetAccelerator Deluxe (NAD) takes some beating. Once started, it opens a control panel with two buttons for loading either IE or Navigator. It loads two copies of your browser – one visible and one invisible. While you surf the Internet in the visible copy of the browser, the invisible copy pre-loads linked and most-often-accessed pages. NAD stores the pages in the browser cache for quick access when you open them in the visible browser.

Unlike Web accelerators which work as proxy servers, NAD doesn't change your browser settings, and so doesn't stop your browser from accessing the Internet when you reboot after a system crash. This makes it easier to configure and lets you browse your cache when NAD isn't running, but it also limits the product. For example, you can't benefit from DNS caching, something products like Surf Express use to give your browser extra zip.

A word of warning: Net-Accelerator doesn't work well with Navigator. In fact, it can actually slow it down. According to IMSI, Navigator doesn't do an adequate job of informing NAD when it's OK to go out and pre-fetch data. This forces NAD to guess what's coming next and if it gets it wrong, it slows rather than accelerates browsing. Not good!

NAD is easy to use and gives you moderate but noticeable speed improvements. But it is a basic Web crawler, lacking some of the clever functions found in other Web accelerators. Version 2.0 is due out this summer, and this will use different accelerator technology, according to IMSI. Our advice is to wait until then before buying.

★★★☆☆

NetAccelerator Deluxe
Price *£34.99*
Pros *Good value, easy to use, extra goodies in the box*
Cons *Optimistic reporting, not recommended for Navigator users*
Contact *IMSI UK*
Phone *(0181) 581 2000*
www.imsi.co.uk

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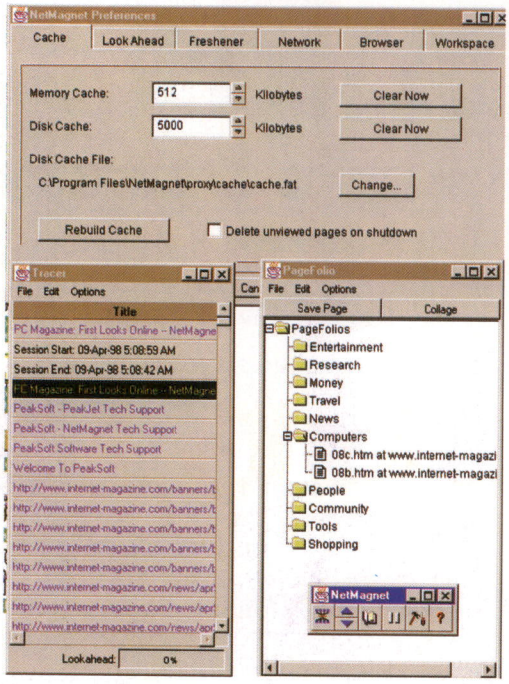
PEAKSOFT



The performance is good but this link-based product is not hugely Net friendly

NetMagnet

A link-based package with a difference. One of the best on the market

NetMagnet is a little different – not only does it speed up Web browsing it also lets you track and control your browsing sessions, organise the information you've retrieved, automatically update these pages, share or publish your research, and then compile it all into a workbook.

Written entirely in Java, the PeakJet engine in NetMagnet pre-fetches pages linked to the current page. It also automatically refreshes pages stored in its cache and includes an option to store sets or groups of downloaded sites in separate caches. Despite these features, NetMagnet is not as easy to use as Surf Express or Got It!.

As soon as you install the product and go online, NetMagnet automatically checks the Peak Web site for updates and installs them if they're available. But underneath it all, NetMagnet is still a link-based crawler that ruthlessly downloads every URL it finds.

You can choose to confine links to within a site and you can also set the depth of a crawl and choose to pre-fetch text only, which makes for very nippy browsing. As NetMagnet's proprietary cache fills up, the software deletes stale pages, replacing them with more frequently accessed ones.

On loading, NetMagnet pops up a six button floating toolbar and installs itself as a local proxy server. If you close down the browser before closing NetMagnet, you may have to reset your browser's proxy settings by hand before accessing the Net again. Note that NetMagnet replaces your browser's cache with its own.

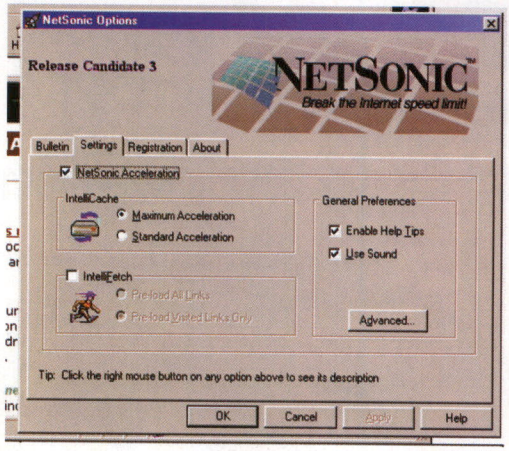
Although the underlying technology isn't new, NetMagnet did some strange things. I had screens corrupted in NetMagnet windows, which had to be closed and reopened to cure. What's more there are nowhere near enough keyboard shortcuts – it's the mouse or nothing.

However, as a Web accelerator, NetMagnet is very good, arguably the best link-based crawler on the market.

★★★★★

NetMagnet
Price *$80 PeakJet £39.99 (inc VAT)*
Pros *Fast, configurable updates done online*
Cons *Not the most Net-friendly product and some strange screen problems*
Contact *PeakSoft Corp*
Phone *(001) 360 752 1100*
www.peak.com

WEB 3000



By identifying only those elements that have changed, NetSonic's intelligent caching process decreases the time it takes to re-load a page. Clever, init?

NetSonic

It looks good, but it's the cunning options that makes this one stand out

Web 3000 is a new Redmond-based start up whose first offering, NetSonic, is worth investigating. NetSonic is currently still in beta (the copy tested was Release Candidate 3) and can be down-loaded free from the Web 3000 site. The program will work with Microsoft IE 3 or 4, Netscape Navigator 3 or 4, Opera and AOL 3, although at the moment there's only a Windows 95 version.

During installation you're asked if you want standard or maximum acceleration. Maximum is the faster as it checks for changed graphics less frequently. There are three IntelliFetch settings – pre-load all links, pre-load only visited links and Off. To adjust to the type of browsing you need, you can switch between these on-the-fly. If you routinely check the same pages every time you log on, set NetSonic to history-based acceleration (its recommended default). If your research requires reading through large numbers of linked pages from a single site, you can switch over to link-based browsing to ease this process – this flexibility comes in very handy.

Like other accelerators on the market, NetSonic caches Web pages and fetches links for faster loading on your next visit. However, it doesn't use the proxy server approach and it differs from other Web accelerators as it's able to determine which Web page elements, such as buttons and menus, change infrequently. When it updates a page, NetSonic identifies and caches only those elements that have changed since the last time the program cached them. This intelligent caching process decreases re-load time.

You can also set NetSonic to check for new graphics on a set schedule, pulling down only text the rest of the time. NetSonic fetches only links internal to a site, not those that point outside of a site, which is a semi Net-friendly way to behave. When a page needs updating, NetSonic beeps and the cursor turns into a jet icon. If you hit the reload button, the page is refreshed instantly. The updating process happens in the background and doesn't interrupt your browsing.

Using the default settings, NetSonic's performance was middling – on a par with Got It! and Web Early, a factor probably attributable to the absence of a proxy server. Nevertheless, it's not difficult to like NetSonic – it's a well-designed quality product that looks good and works unobtrusively in the background. And don't forget – it's still in beta and is still being fine-tuned. Why not visit the Web 3000 site and find out for yourself?

★★★★★

NetSonic
Price *Free*
Pros *Flexible, intelligent Web accelerator*
Cons *No proxy server, average performance.*
Contact *Web 3000*
Phone *(001) 425 836 3000*
www.web3000.com

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GEO

Emblaze Web Charger

Keep your Web site's picture quality high while keeping download times low

If you wany anyone to spend time at your site, you have to balance image quality against file size and download times. With a million sites just a mouse click away, page downloads have to be fast.

Web Charger's interface leaves a lot to be desired, and why does Geo assume you only want to see its program?

Emblaze Web Charger is an image compresser that lets you set the download bandwidth you're working to satisfy, from 14.4Kbits up. When you load a graphics file (BMP, JPEG and GIF imports are supported), it shows you the original file size and download time for the current bandwidth setting, along with the reduced size and download time for the recompressed image.

You set the image compression level by using three sliders which determine the image quality, size and download time. The program automatically saves images created with a variety of settings using unique file names.

Web Charger is simple to use, but it has some irritating features. Foremost among them is the interface. Why, when all Windows programs are meant to use the same interface, has Geo inflicted one that's considerably worse than Windows upon us?

And although it will show you the original and new images by momentarily overlaying the two, you can't view them side by side.

There's also no pixel resolution resizing feature, and you can't save images as GIFs or have Web Charger run over a set of images in batch mode.

On the plus side, Emblaze Web Charger does let you select areas of images to be less heavily compressed, so they retain the fine detail. But if you use a marquee to maintain detail in an area with high compression levels, you get visual artefacts of the kind produced by softening the image and then sharpening the selected area.

You can produce better results almost as fast in PaintShop Pro. And if you want the download speed information, try WebVise Totality (reviewed in the March 98 issue).

Steve Patient

★★★☆☆

Emblaze Web Charger

Price *£65*
Pros *Simple to use*
Cons *Non-standard, non-resizable interface, can't view before and after images together, no GIF support*
Contact *Geo*
Phone *(01765) 704 000*
www.emblaze.com

RAMP NETWORKS

Webramp M3t

A Net access solution for a small office network, but it comes at a price

Ramp Networks' WebRamp M3t is a novelty. It's a multiple modem router aimed at small office networks and workgroups – it works with Windows 95, NT and Macs. As is increasingly common with Internet access devices, the M3t is a hybrid device. It combines a four-port 10Base-T hub with a DHCP (dynamic host configuration protocol) server and an IP router which has three DB-9 serial ports where you plug in one or more modems.

The idea is you can plug in two extra modems to get Net access speeds of up to 168Kbps. All three modems are bonded together to form a single data channel using COLT, Ramp's multiplexing technology.

The M3t is the deluxe 'telecommuter' version of the M3, which allows dial-in access to the network for remote workers and allows you to dial out again to the Internet.

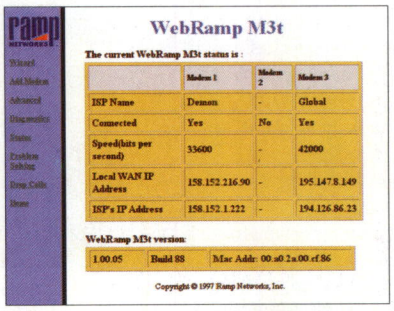
Setting up the M3t doesn't take long. You plug the M3t, a modem-sized device, in to your 10Base-T cabling and plug in the modem(s). You configure the hardware through a friendly browser interface. This takes you through the TCP/IP configuration. Once this is complete and you've rebooted, the M3t automatically makes a connection when a workstation needs to access the Internet and can terminate a connection automatically when the line has been idle for a prescribed time.

The M3t has no special drivers for workstations, the only requirement being IP support. The hub also lacks special configuration software, but you can access configuration settings through any Web browser. There's no activity log and no way to restrict access by time of day or to enable other security measures.

The M3t doesn't make use of Windows 95 modem support or dial-up networking, but you can install different modems. It can use modems in an incremental fashion so you can use one modem for light loads adding further modems as your use of the product increases. However, you will need a separate, single-user ISP account and phone line for each modem.

There appears to be no load-balancing between modems, so when a user accesses the system, two modems can be fired up, but one or the other does the donkey-work. If you open a second copy of the browser, the other modem starts doing more work.

The process remains totally transparent to your service provider and to the network workstations. You can configure the M3t to either dial all of its three modems simultaneously, or to dial one modem initially and use the others only when additional bandwidth is needed.



As well as enabling you to use three modems to beef up your throughput, M3t allows dial-in access to the network for remote workers

The M3t is an interesting idea, well executed. But it's not a bargain basement solution, and there are similar ISDN solutions available at more competitive prices. Adding an extra modem doesn't expand the bandwidth by 56Kbps – you'll be lucky to see a doubling of bandwidth with three modems. A small business might also want to look at the ISDN Net access option.

Roger Gann

★★★☆☆

WebRamp M3t

Price *£513*
Pros *Built-in hub, easy to set up and configure*
Cons *Average performance with two or three modems; limited manageability*
Contact *Ramp Networks UK*
Phone *(01420) 544 656*
www.rampnet.com

BREEZECOM

Breezecom Pro series

Rid yourself of those annoying cables with this wireless option for Net connection

Hooking up to the Internet over radio waves is an appealing prospect. It's so much easier than draping wires all over the place. And one of the most intriguing wireless products is the fuss-free Breezecom solution.

The Breezecom comes in two halves. You plug the access point into the main network, and the station adapter connects to your PC. There's a variety of station adapters, including a PC card version and one that can hook up to four PCs at once.

Installing the product is easy – connect the unit to your computer's network card or the network hub with a standard 10Base-T cable. The process of sending and receiving the network traffic is invisible to the user and the computer.

As you'd expect, security is a major issue for this type of connection. Breezecom uses Frequency Hopping Spread Spectrum (FHSS) to send the data. This means the units change the frequency at which they send and receive data 50 times a second, making it tricky to intercept data as it's transmitted. A 32-digit security code identifies each unit, and you can't make a connection without this code being programmed into each of the units. Nobody can tap into your network, unless they know the code.

Data is sent at a maximum speed of 3Mbps, but speed depends on the distance between the units and what's in the way – if the signal is weak, the unit automatically switches down to a slower speed of 2 or 1Mbps. This is slower than normal Ethernet, which runs at 10Mbps. However, this bandwidth is seldom fully used, so it won't make much of a difference unless you're really blasting data down the lines.

If you use a bigger antenna you can also boost the strength of the signal. Breezecom claims that the standard antennas (at four inches high) are good for about 1,000 meters with no obstructions, or for about 150 meters in a typical office. Because of the high frequency the units work at, the signals don't travel well through walls and floors. Still, we managed to get a 2Mbps connection between our basement and the third floor.

These small, useful gadgets are easy to install and allow secure wireless Net access at a decent speed

Breezecom is currently pushing this range to ISPs interested in providing Internet access without the need for a leased line, and it seems well suited. Although there are limitations inherent in any form of radio communication, the system is easy to install and is completely invisible to the user – they need never know that they're accessing the Internet without a wire.

Richard Baguley

★★★★★

Breezecom Pro series

Price *£1,390 (access point) £775 (station adapter)*
Pros *Completely invisible to the user*
Cons *Speed limitations*
Contact *Breezecom UK*
Phone *(01264) 334 153*
www.breezecom.co.uk

ESAFE

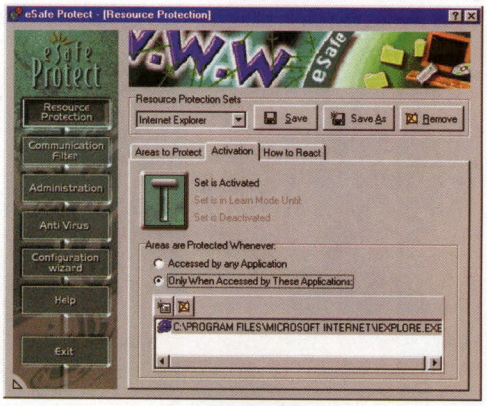
eSafe Protect

Not a condom for the techno generation, but the software equivalent for your PC

Part of Israeli company EliaShim, eSafe has taken an innovative approach to protecting your PC from nasties on the Net with its new Protect package.

eSafe includes the usual anti-virus software, but it also adopts two additional safety strategies. eSafe calls them a personal firewall and anti-vandal protection.

The anti-virus module claims to offer 100 per cent protection and is NCSA certified. If you register, you get a year's access to downloadable updates for the scanner module. The module copes with traditional viruses as well as macro viruses and can be used in resident (where it checks every download and file launch) and manual scanning modes.



One click brings up the eSafe console where you can configure all of the anti-virus, anti-vandal and firewall software components along with the personal Access Sets

The firewall protection lets you monitor and block access to selected IP addresses and domain names containing specific words (such as sex). These words can be user defined. It monitors ports associated with Web access, FTP, Telnet and so on. It can block outgoing material such as non-encrypted credit card numbers, email and newsgroup postings containing specific text, and can block access to named newsgroups.

eSafe can also be set up to allow information to go only one way on specific ports, for example only allowing an SMTP connection for outgoing email and to restrict access outside certain hours. As if this wasn't clever enough, you can create different Access Sets for different users.

But it's the anti-vandal part of eSafe which shows some real innovation. It says it creates a sandbox for applications – this means it lets you restrict a particular application's access to drives and folders. Functions restricted incude read, write, execute, create and delete. These can be all set for different types of applications. This means you can whizz around the Web downloading Java and ActiveX applets secure in the knowledge they can't get to most of your machine to do any damage. Again, you can set up different restrictions for different users which can be password-protected.

On the downside, you could spend your whole life fiddling with settings without ever knowing whether you're benefitting, especially when IE4 has pretty good security features built in. And Java already has a sandbox built into the system, although it's not as comprehensive as eSafe's.

eSafe Protect is great for defending your PC from your children's Net activities, guarding as it does against sex sites and other nasties. Others may find the security options built into existing Net software are adequate.

Steve Patient

★★★★½

eSafe Protect

Price *£49.95*
Pros *Effective software security options*
Cons *Time consuming to set up and maintain effective Access Sets*
Contact *eSafe*
Phone *(0181) 3811923*
www.esafe.co.uk

NOKIA

Nokia CardPhone

CardPhone is a GSM mobile phone on a PC Card – perfect for data or fax connections

Sounds great doesn't it? No longer do you need a separate mobile phone and PC Card – it's all in one package. Sadly you can't use the CardPhone as a normal mobile phone unless you attach it to your computer – there's no key pad, microphone or loudspeaker on the card itself.

If you want to make a voice phone call, you have to use your computer's sound card and a microphone. This isn't a realistic option, unless you don't mind booting up your PC every time you want to make a call.

it's not very sensitive. But there's an optional external aerial which should solve this problem.

Nokia isn't supporting Windows CE with this device – it claims that CE devices can't cope with the power requirements of the CardPhone. As with mobile phones, it does use a fair bit of power, so you'll notice your laptop's batteries running out quicker if you use it a lot.

The CardPhone is certainly small – combine it with a teeny laptop like Toshiba's Libretto (which we used for this test), and you've got a fully functional PC with Internet connection which is about the size of a large paperback.

Of course, it's not a particularly fast connection (mobile data connections are limited to 9,600 bits per second), but it's certainly fast

The Nokia CardPhone gives you easy Internet access on the move in a very compact form

Although it can do voice, the CardPhone is mainly aimed at those wanting to make data calls or send faxes on the move – both of which it does well. It appears as a normal modem when the special drivers are installed, so any software which tries to access the com port directly can work with the card as if it were a normal modem attached to a normal com port, albeit a rather slow one.

On the downside, as it's sending data over radio waves (which have a nasty habit of bouncing around the place), the speed it can send data at also varies, which could confuse some software. On top of this, the card isn't as good at pulling in signals as a normal mobile phone. The aerial included is only about an inch long and isn't extendable, so enough to send and receive email. Browsing the Web is a bit of a pain – it can be done, but it's damn slow.

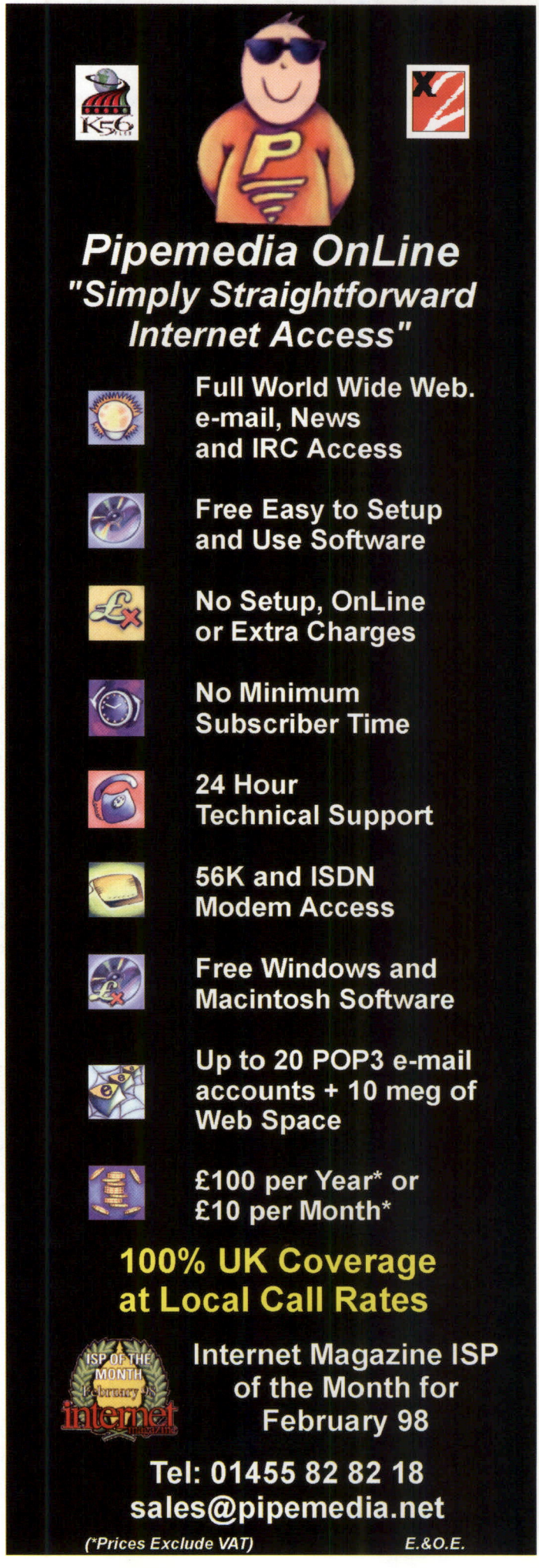
If you've already got a mobile phone, it would probably be easier to get a PC Card which hooks up to this. However, if all you want is a data and fax connection, this card is a simple, effective solution.

Richard Baguley

★★★★☆

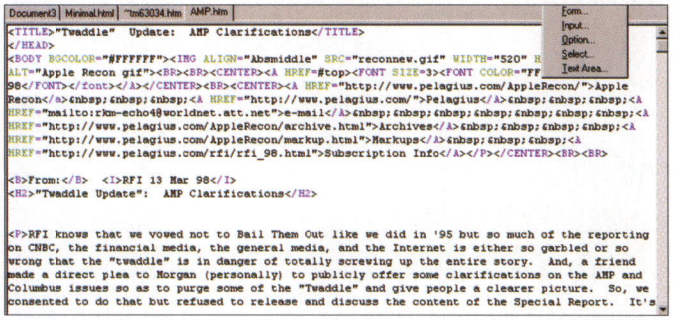
Nokia Card Phone

Price *approx £99 with connection*
Pros *Works well for fax and data and it's a good price*
Cons *Difficult to make voice calls.*
Contact *Nokia*
Phone *(01480) 434 343*
www.nokia.com



LUCKMAN

Luckman Web Studio 2.0



Web Studio 2.0 is a non-graphical HTML editor from the old school

WYSIWYG is for wimps. Web Studio 2.0 is a pure text editor

Admittedly, the wide range of added extras that come with the double CD Web Studio package make it good value for money. However, the core editor, Luckman's WebEdit Pro, can only really be recommended to HTML programmers happy to work with an entirely text-based editor.

But if you like this sort of thing, WebEdit Pro can help you create your HTML code pretty quickly. Its toolbar contains a series of pull-down menus which can be used to insert a wide range of tags to handle elements such as tables, forms and text formatting. And using the built-in Quick Preview option, you can view your pages as you work. But, this only supports HTML 2.0, so features, such as frames, will need to be previewed in an external browser.

As a text editor, WebEdit Pro works well. It has some useful features such as the ability to include content ratings in your pages. As well as the various programs included on the two CDs you also get two programs for creating and editing Java applets along with utilities for creating image maps, database and report publishing.

There's nothing wrong with producing a text-based editor as long as it's a good one, and as long as you accept it's only going to appeal to a hard-core of HTML propellerheads. The trouble with WebEdit, though, is that Luckman has made a rather half-hearted attempt to keep up with newer graphical editors to appeal to a broader audience. The program doesn't have a graphical editing mode at all, but it does include a number of wizards, which claim to improve the program's ease of use.

There's a frame wizard for building frame layouts. This works well enough at first, but as soon as the frames have been created you're thrown back into text editing mode, so you still have to grapple with the raw source code.

There are a variety of other wizards and 'builders' for creating tables, forms and other elements, but some of them include extremely complex dialog boxes which will discourage any new or inexperienced users.

The problem is that these wizards help you with the initial creation of page elements, but then dump you back into text editing mode. There's no point in trying to tempt beginners in with wizards if you then abandon them to a text-based editor once the wizard's done its work. We can only recommend Web Studio 2.0 to users who prefer to work entirely in text mode. Anyone wanting graphical editing should look elsewhere.

Cliff Joseph

★★★☆☆

Luckman Web Studio 2.0

Price *$149.99 (around £90)*
Pros *Efficient text editor, good value for money*
Cons *No graphical editing mode*
Contact *Luckman Interactive*
Phone *(001 213) 614 0966*
www.luckman.com

NETOBJECTS

Fusion 3.0

The latest release of this DHTML Web site tool is let down by its documentation

Fusion 3.0 comes with a long list of new features including more accurate page guides, dockable tool palettes in the main page view, and support for media formats such as QuickTime movies. But the most important improvements are focused on two main areas – DHTML support and more versatile page design.

It might not be the most intuitive program, but Fusion's new DHTML features work surprisingly well. Like Macromedia's DreamWeaver, Fusion lets you select a series of predefined Javascript 'actions'. To apply an action to any object on the page, select the required object and go to the actions section of the on-screen properties palette.

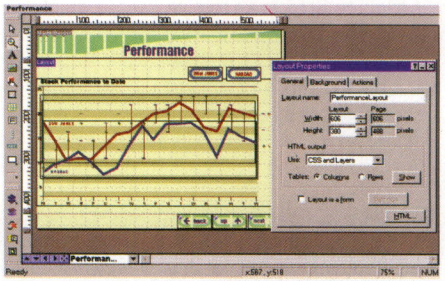
You create actions by selecting a 'trigger' event, such as a mouse click, and then specifying the action that should respond to that event. The actions available include a wide range of animations and transitions, as well as buttons and other interactive controls. All these options are selected from pull-down menus, which makes it easy to select and modify actions as you go along. The whole process is menu-driven, but you do have the option of creating your own custom Java scripts if you want.

The only annoying feature is the fact that Fusion doesn't have a built-in preview mode, so to preview actions and other design elements you waste time switching between Fusion and an external browser.

Fusion is also lacking a built-in HTML text editing mode. It does come bundled with a copy of Allaire Homesite, however, and also allows you to link external HTML files to specific areas on your pages. But, you don't have the option of switching quickly between graphical and HTML source modes as you do in most other HTML editors.

On the other hand, the main graphical editing mode has been considerably improved. The Master Borders, which are used to automatically place fixed elements such as logos and navigation bars on all your pages, can now be overriden. You can depart from the fixed layout styles provided by the program and create more varied page designs.

You can also place graphics and other media elements inside text boxes, and use wordprocessor-style layout options to enhance the look of your pages. This makes layout tasks, such as wrap-around text, easier to work with, although they are poorly explained by the online manual. And as there's no proper printed manual, beginners will find the vague online version pretty unhelpful. Once you've finished your page designs you have a new option called 'Everywhere HTML'. This lets you specify exactly which browsers your HTML output will be compatible with.



Fusion 3.0 provides improved page layout features

So there are plenty of new features to play with in this upgrade. The well-designed DHTML support and improved page design options are particularly welcome, although they're let down by the poor documentation. Fusion 3.0 may not win any converts from rival programs, but existing users will certainly get value for money.

Cliff Joseph

★★★★☆

Fusion 3.0

Price *£199 (£65 to upgrade)*
Pros *Good DHTML support*
Cons *Poor documentation, no built-in preview mode*
Contact *NetObjects Europe*
Phone *(01628) 666 363*
www.netobjects.com

Pace NB56 Voice

Cheap and all you need from a PC Card modem – could this be true?

UK modem-maker Pace's latest baby is a PC Card modem, the NB56 Voice. As you might guess from its name, it's a 56K modem based on Rockwell's K56flex technology. However, it's flash upgradable to the V.90 standard and Pace will make the new firmware freely available in the near future.

The NB56 is a 'straight' fax and data modem – it doesn't, for example, support GSM connections (though it has MNP10 cellular protocol support). It comes with a three-metre phone cable and features a built in line interface – which means no soap-on-a-rope lump in the phone cable.

Pace manuals used to be poor or non-existent. But things have changed and you now get a good basic user's guide plus a more comprehensive manual on disk, supplied as a help file and front-ended by a browser.

Installation of the NB64 is easy and a 48Kbps connection speed, though not guaranteed, is possible

Installation is easy: Windows 95 Plug and Play immediately identifies the modem, and the driver software installs quickly from the provided disk. Configuration takes place with no surprises, taking over the available COM2 assignment with standard resource selections. As for connection speeds, they're variable. But a 48Kbps connection is possible.

The modem is bundled with the usual trial Internet software from AOL, BT Internet and LineOne plus a CD-ROM of more useful software. This includes an assortment of freeware, shareware, and demo versions of Net programs, ranging from games and browsers to utilities and Web-page development tools. The voice software bundled with the NB56 is that old Windows 3.1x clunker, SuperVoice. It may be past its sell-by date, but it still works well.

Pace seems to be standardising on a common feature set for its current range of modems – they all run at 56Kbps and have impressive features such as UK Caller Line Identification and voice support.

The relevance of these three features is arguably wasted on a mobile modem. Nine times out of 10 you're not going to be able to get 56Kbps speed. I'd also suggest that voice and Caller Line Identification support are superfluous – when mobile, you'll mostly be making calls, not receiving them. Don't get me wrong, these features are good to have, it's just that for the mobile market they're not terribly important.

What is impressive about the Pace is its low power consumption its flash-upgradability, and its very reasonable price. At around £120, the NB56 is one of the best value PC Card modems on the market. In other words, an all-frills modem selling at a no-frills price. What's more, it comes with a five-year guarantee.

Roger Gann

★★★★☆

NB56 Voice

Price *£119 (inc VAT)*
Pros *Cheap, well specified, works well*
Cons *Ancient utility software, some features not strictly necessary in a mobile*
Contact *PMC Consumer Electronics*
Phone *(0990) 561 001*
www.pacecom.co.uk

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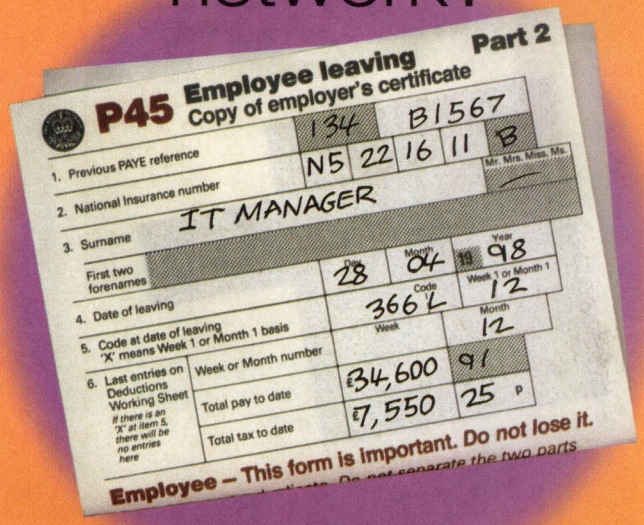

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NETSCAPE

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You can find clues to the answers at the ACCO Web site.
www.accoeurope.com

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a) Nose
b) Foot
c) Ear

2 If you want to relax at the ACCO site which area should you head for?

a) Chill Zone
b) Break Out Area
c) Coffee Time

3 The latest two-button-mouse is called

a) Ambidextrous
b) Kensington Orbit
c) Mouse in the Box

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Carefully study this picture of the Hypermood (TM) mouse pad and tell us which member of the Internet editorial team's foot is pictured.

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ACCO competition
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Priory Court
30-32 Farringdon Lane
London EC1R 3AU

Or email us your answers to compo@internet.emap.com
Or even fax us with your answer. The number's (0171) 309 2749.
Don't forget to include your name, postal address and contact telephone number.

RULES. The judges' decision is final and no correspondence will be entered into.
The competition is open to all UK residents except employees and their families of ACCO or Emap Consumer, their agents or anyone connected with the competition. Under 18s must supply the written consent of a parent or guardian.There are no alternatives to the prize offered.
No responsibility is accepted for any entries lost, delayed or damaged in the post. Proof of posting is not proof of delivery.
The winners will be drawn from the correct entrants on 26 June and will be notified by post by 1 July. Internet Magazine will publish the winner's name in the magazine. The winner's name can also be obtained by sending an SAE to Internet Magazine, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

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Expert help

Readers' questions are answered by our panel of experts. Send your query to faq@internet.emap.com

Richard Baguley is our technical editor. He'll be answering your technical questions on everything from relational databases to digital signatures.

Mike Slocombe has designed sites for clients that include Snickers, Zenith Films, Direct Connection, and Precision Software. He also produces Urban 75, an irreverent online magazine. Mike will be answering all your Web design queries.

Roger Gann is a freelance computer journalist. He specialises in connection issues. If you're having trouble with dial-up networking or want to know why your 56K modem just isn't talking to your ISP, he's your man.

Michael Chissick is the head of Internet and IT law at Field Fisher Waterhouse, a city of London law firm with 50 partners. He'll be ruling on your legal problems.

Please note...
We can only answer the questions we print here.

Hablar español (por el email)

Q I need an email program that allows me to spellcheck in Spanish. Can you help?
Dr L Castilla
luis.castilla@virgin.net

Richard Baguley replies: There are several email programs that have both a Spanish interface and a Spanish spellchecker, such as the Spanish version of Eudora Pro (from **www.eudora.com**). Alternatively, Microsoft Outlook uses Microsoft Word to edit emails, so if you were to get the Spanish language version of Office, you could use the spell checker built in.

Another alternative would be to use a spellchecking utility that has a Spanish directory, such as AutoSpell (from **www.spellchecker.com**). These utilities can be used to spellcheck any text or text files, so they can be used with any email program. Many programs of this type allow you to download and use different directories for different languages, so you could even use the same program to check email you're sending in both Spanish and English.

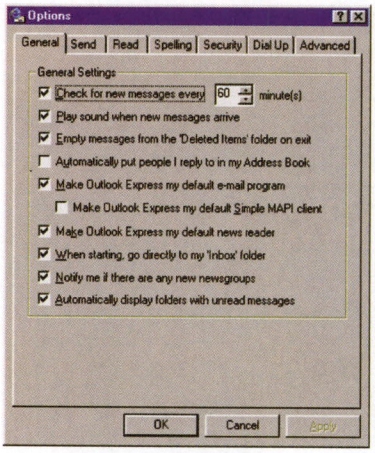
But I want my email now!

Q I'd like to set up my machine so it automatically dials my email box hourly throughout the working day but not at night or weekends. I'd also like it to flag me when mail arrives. Can I do this through Windows 95?
Derek Butler
derek.butler@btinternet.com

Roger Gann replies: I don't know of a mail client that is schedulable in this way. The Plus! add-on for Windows 95 does include relatively sophisticated scheduling capabilities in System Agent, but I think it's unsuitable for this task because it won't automatically close an application – in this case the mail client, once it's checked for new mail, which it needs to do if it's to connect automatically every time it starts.

Both Internet Mail and Outlook Express, the default mail clients for Windows 95/Internet Explorer 4 allow you to automatically check for mail at predetermined intervals. Of the two, Outlook Express is better suited to this task – it allows you to check multiple POP3 mailboxes simultaneously and has slightly better scheduling options. Both email clients will play a mail notification sound when you've got new mail. They also flag the presence of new mail by placing an envelope icon in the system notification area of the Taskbar.

Simply load Outlook Express and select Options from the Tools menu. On the General tab enter the interval of time in



Microsoft's Outlook can be set up to automatically check for new email at predetermined intervals

Top reader's tip wins

I maintain a couple of Web sites. One is based on a Unix server where the default page is index.html. The other is on an NT server and the default page is index.htm. I used to find it a bother remembering which system I was writing for and getting the extension right. I now set all my page extensions as .htm and call my main page main.htm. I then have two redirecting pages with identical content (shown below) called index.html and index.htm which automatically load main.htm (or provide a link when redirection does not work). By leaving these two files in place I never need to remember which extension to use.

```
<HTML>
<HEAD>
<TITLE>Load Main Page</TITLE>
<meta http-equiv=refresh content="1;url=main.htm">
</HEAD>
<BODY>
<H4 ALIGN=CENTER>Please wait while the main page
loads...</H4>
<P ALIGN=CENTER>or</P>
<P ALIGN=CENTER><A HREF="main.htm">click here</A> if
your browser
does not load the main page.</P>
</BODY>
</HTML>
```

Richard E Warriner
r.warriner@alinter.co.uk

minutes that you want your message to be checked (in your case, 60). Also, make sure that the Play sound when new messages arrive option is checked. Then go to the Dial-up tab and check the Hang up when sending box. Make sure your ISP is listed in the Dial this Connection dialog box. The procedure for configuring Internet Mail is essentially the same – you'll find time interval details on the Read tab, and the Disconnect check box is on the Connection tab.

So with this auto-dial option set, either mail client will dial out at hourly intervals. OK, this doesn't stop running in the evenings and weekends but you could always turn your PC off at night and over the weekends. I have to say that I have a healthy distrust of Windows 95's unsupervised auto-dialling capabilities and have the phone bills to prove it. Many's the time I've come to the office to find that the modem has been online for 16 hours, despite having set a five-minute inactivity threshold.

Another potential problem is that auto-dialling depends on the smooth, reliable operation of dial-up networking. Don't forget that if you fail to connect a couple of times in a row to your ISP, dial-up networking deliberately forgets your password and you have to re-input those details to get your connection back.

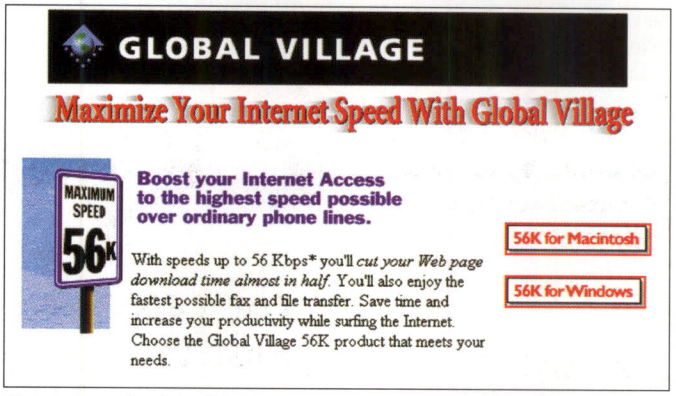
There are alternatives you might also want to consider – for example there are plenty of email checkers that you can use to check for new mail. Pop over to the mail checkers page at **http://tucows.siol.net/checkers95.html** and try out the freeware product E-Mail Notify.

Guarantees of service?

Q Back in January I noticed an ad for Virtual Web Hosting from a US company called 9NetAvenue(www.9netave.net). When it came to setting up my account I found their online documentation incomplete, their technical support non-existent, and services that were supposed to be available at the time of sign-up were now 'coming soon'. Of course, I promptly cancelled my account under their 90-day money back guarantee (no terms and conditions provided). However, I'm still waiting for the reimbursement of the $118.67 charged to my bank account. Is there a legal remedy for dealing with such shoddy service over the Internet?
Paul Boakye
boakye@compuserve.com

Michael Chissick replies: I'm not sure what means of payment you used Paul – 'charged to my bank account' could mean a bank transfer or debit or credit card payment. Clearly 9NetAvenvue is in breach of its contract, as the services are not being performed with reasonable care and skill.

You should should write to 9NetAvenvue explaining why it's in breach of contract and request a refund. If the company doesn't respond satisfactorily, you could sue the supplier in the States. However, this is an unrealistic option when you're chasing £70. Alternatively, if you paid by credit card you can write to your credit card company and explain the position. Sadly, because the purchase was under £100 the credit card company isn't legally obliged to refund the amount paid, but it's worth a try.



The purchase of a 56K modem is not necessarily a guarantee of speed...but keep checking for updates

More speed, please

Q I have a Global Village K56flex modem, but my modem only connects to my ISP Netmatters at 38Kbps. BT has checked the line and put up the gain, but that's made no difference to the speed at all. We have a US Robotics 28.8 modem which connects at 28.8Kbps every time and we live about 100 yards from the telephone exchange. How can I increase my connection speed?
D Woodhouse
anG@netmatters.co.uk

Richard Baguley replies: Sadly, there's no guarantee that you'll get a 56K connection from a 56K modem even if the phone exchange is in your back bedroom. 56K modems are incredibly sensitive to noise on the phone line. In our tests, however, we were getting speeds of 46 to 48K from these modems.

There are various things that you could try to improve the speed, such as disconnecting all the other phones in the house or using a different phone socket for your modem. It might also be worth checking the Global Village site (at **www.globalvillage.com**) to see if it's released any software upgrades to the modem since you bought it (the company recently sold its modem arm to Boca Research, by the way). You could also plug the modem into a different phone line – if it's still slow, it's probably a modem problem. Finally, you should look at installing the V.90 software upgrade which is due to be released in April.

Hold the Frontpage

Q I've been looking for an Internet service provider which supports Microsoft Frontpage extensions. However, a quick trawl of the top ISPs reveals that big providers such as Demon, UUNet and Global Internet don't

a Vivitar camera
DIGITAL IMAGING

Thanks for the tip, Richard. The initial page opened when the site is accessed depends on how their server is configured. If you're not sure, check with your Webmaster.

Richard wins a Vivitar camera, the ViviCam 2500 digital camera. It's the perfect camera for Internet hobbyists, with a 1.8-inch colour LCD display and an RRP of £259.99. You can store up to 64 pictures in the camera's internal memory at a resolution of 480x360 pixels, making the ViviCam 2500 ideal for taking pictures for your Web pages or for emailing to friends. Other features include auto flash, a self-timer, macro mode, a carry case, and graphics and photo album software.

For more details on Vivitar's products, visit www.vivitar.com

support Frontpage. Meanwhile, Netcom Internet told me that its tests with the product crashed its server. Should I forget all about using Microsoft Frontpage extensions?
Christopher Etchells
etchells@countryschool.com

Mike Slocombe replies: This is one of the most frequently-asked questions on the HTML authoring newsgroups. Users read all about the groovy stuff that Frontpage can do for them, rush out and buy it and then spend hours trying to figure out why nothing works. It's usually only later on that they learn from their ISP that these extensions are not available on the server – so always check with your ISP first before buying!

The main problem is that Frontpage is a proprietary product, and the server extensions are only available for Microsoft Internet Information Servers and a limited number of other platforms. This means they won't work on many ISPs' servers or are deemed 'unsuitable' for various reasons. As Malcolm Muir of Demon Internet explained: "Demon hosts a significant number of Web sites on their Homepages server and need hardware/software capable of meeting the demands of visitors to their customer's pages. Few products have proven capable of meeting this demand at the present time. Frontpage extensions are simply not available for the hardware/software we use to serve our Homepages customers."

However, Demon, like many other ISPs, can offer Frontpage extensions on their business services (which sadly don't come free with your standard dial-up account).

But, if you're desperate to use Frontpage extensions and don't mind changing ISPs, all is not lost: Microsoft says there are now over 100 UK ISPs and Web space providers hosting FrontpageServer Extensions. Check out a current list of 50 Web space providers that are members of Microsoft's Frontpage Web Presence Provider programme at **www.microsoft.com/uk/referral/frontpage.htm**.

Finding the facts

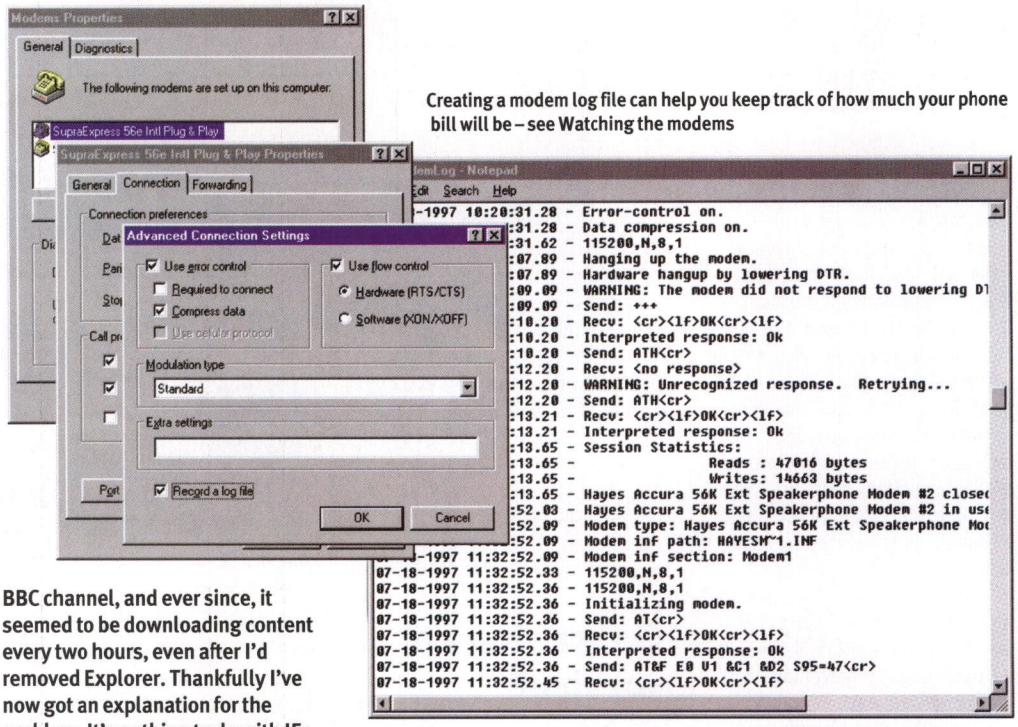
Q You published my original query in your April issue. I'd installed IE4 and subscribed to the BBC channel, and ever since, it seemed to be downloading content every two hours, even after I'd removed Explorer. Thankfully I've now got an explanation for the problem. It's nothing to do with IE4 – it's Microsoft Office. Douglas Steven had suffered the same problem and pointed me to the file C:\MSOffice\Office\FINDFAST.EXE, which was doing its automatic index update.

I found its indexer log (a hidden file named FFASTLOG.TXT) which showed that the MS Office Recent Files index is updated every two hours from power-up, and these times exactly coincided with the disk spasms.

Browsing FFASTLOG.TXT should show that it has a single line entry every two hours. If you get several error message lines as well, then remove the dead links causing them until you only get a single line each time you update. While you're about it, delete all but the last few days from this log to bring the file down to a compact size.
Dr Stuart Young
Stuart.Young@ed.ac.uk

Richard Baguley replies: I'm glad that one is cleared up. I've noticed the same thing sometimes, and it's very irritating when you're playing Dungeon Keeper and your machine decides it's time to re-index several gigabytes of files, and slows everything down.

Actually, you don't have to find that hidden file to alter how often FindFast creates its indexes. All you have to do is to run the FindFast control panel, and select update interval in the Index menu. If you change this to something more reasonable, like 24 or 48 hours, it should be less of a problem.



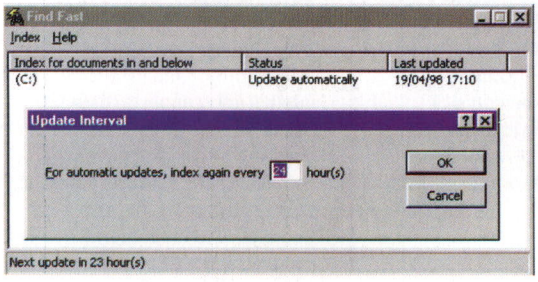
Creating a modem log file can help you keep track of how much your phone bill will be – see Watching the modems

Watching the modems

Q I recently downloaded a piece of software that automatically logs my time online and works out my costs. The software uses the modem log file (ModemLog.txt) located in the Windows directory. My problem is that the log file only lists my connections up until last December, then it mysteriously stops. I've switched ISPs a few times, which may be the cause. Has it stopped logging completely, or has it started afresh elsewhere?
Dilip Dutta
QRidpath@compuserve.com

Roger Gann replies: ModemLog.txt is a text file that lives in your Windows folder. It's a comprehensive listing of events that happen whenever you use your modem. By default, a log file isn't kept, you have to explicitly turn it on. To do this, open Control Panel and click on Modems. Select your modem and click on the Properties button. Click on the Connection tab and then on the Advanced button, finally check the Record a log file check box.

Windows 95 also allows different modem settings for each dial-up networking connection, so you should check each DUN connection you have – select the Properties of each connection and click on the Configure button on the General tab and repeat the above process as necessary. I would guess that your frequent changes of service provider have created new dial-up networking connections where the log file option was not turned on.



Changing the settings in your FindFast control panel could put an end to your computer's mysterious activity

It all comes crashing down

Q Over the last four months my computer has exhibited an irritating trick. When I accept an invitation to disconnect from my ISP and then allow the mouse to move even just a tiny bit during the half-second between acceptance and the click from the modem confirming that disconnection has taken place, my keyboard and mouse freeze. I'm left with no alternative other than to press the

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reset button. What's happening, and how can I avoid it?
Douglas Steven
dstev@globalnet.co.uk

Roger Gann replies: In the absence of more details, my short answer has to be I haven't a clue – your PC is exhibiting most unusual behaviour indeed. I'm afraid I can't point to an instant cure for this irritating problem, only areas that you should investigate. The first thing I'd try is making a modem connection to someone other than an ISP, such as a bulletin board (ie a connection that you make using HyperTerminal and not dial-up networking) and then try and reproduce the problem when disconnecting from this sort of connection. Or you could boot up in Safe Mode with Networking and again, try to reproduce the problem with both dial-up networking and HyperTerminal to see if the fault goes away. As a last resort, I'd try removing all the offending components and reinstalling them – this includes DUN (dial-up networking), the mouse and the modem.

Call the fire brigade

Q I've been viewing Fire Brigade sites from Sweden and Holland, and I'd like to know how I go about saving them permanently to my Zip drive. I've tried saving the sites as they're viewed on Internet Explorer 4, but when I re-view them from my Zip drive, some load as they would in Internet Explorer and others don't – without pictures, for example. I'd also like to know how long Internet files are stored for and what's the best way to remove the unwanted files?
Archie Mckinnon
arcmkin@globalnet.co.uk

Roger Gann replies: The short answer is that you can't save complete Web pages in Internet Explorer 4. The normal way to save a Web page is to open the File menu, then click Save As, double-click the folder you want to save the page into and in the File Name box type a name for the page and click Save. However, this only saves the text on a page, not the graphics. If there's a picture on the page, you can save it by placing the mouse cursor over the image and right clicking Select Save Picture As, selecting a destination, such as your Zip drive, and giving the image a name. Click OK to save the image to disk.

These files will be stored for as long as you choose. There are also files held in the cache. These are portions of files that Internet Explorer downloads and stores locally in case they're needed again. To find out how much disk space is devoured by these files, click View then Internet Options. Look at the Temporary Internet Files section of this dialog box. You can either delete all the temporary Internet files or adjust the Settings. If you click the latter button, you get another dialog box that lets you set the amount of disk space reserved for these temporary files. Once that disk space is full, the oldest non-accessed files will be zapped to make room for newly cached files.

Legal brief: The legal rights of cybershoppers

What can you do when goods you've bought over the Internet are faulty? Michael Chissick, partner in the law firm Field Fisher Waterhouse, explains your legal rights and offers some practical tips

Consumer protection laws apply to the Internet in the same way as it does when you're buying goods in the high street. The problem is how to enforce these rights over the Net.

English law states that goods must be fit for the purpose they're intended to perform and of satisfactory quality. If services are bought, they must be performed with reasonable care and skill and within a reasonable time. If goods are faulty or services shoddy, it amounts to a breach of contract by the supplier and the consumer is entitled to a refund and possibly compensation.

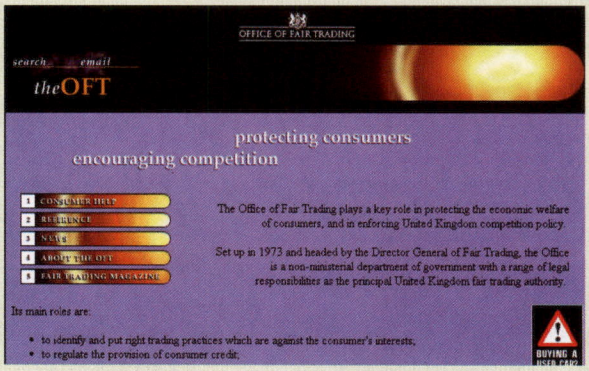
If the supplier refuses to honour its legal obligations, however, there's no option other than to sue. It can be expensive and time consuming suing a supplier in the English courts, and with Internet goods it can be even worse. The contract will usually be governed by the laws of the country from where the goods were supplied not bought. Is issuing proceedings in the US worth the hassle when the goods are only worth, say, £200?

It's not all depressing news, though. If Internet purchases are made by credit card, a UK customer is also protected by the Consumer Credit Act of 1974. For credit card purchases over £100 (and less than £30,000), you have the same legal rights against the credit card company as you do against the supplier. If the goods or services are faulty, you can leave the credit card company to sort out the problem with the supplier. The Consumer Credit Act also covers purchases under £100. However, you do have to prove that misrepresentations were made by the supplier before the sales contract was entered into. Unfortunately, this is tricky to prove.

The Consumer Credit Act doesn't state that credit card companies are liable where foreign suppliers are in breach of contract. However, some of the leading card issuers have confirmed that, as long as a supplier is sanctioned to accept payment by their credit cards, they'll honour their legal obligations under the Act whether the supplier is based in the UK or overseas.

When you buy anything over the Internet makes sure you take the following steps...

- Always pay by credit card.
- Before making the payment to an overseas supplier, get confirmation from your credit card company that it'll accept its obligations under the Consumer Credit Act if the goods or services are faulty.

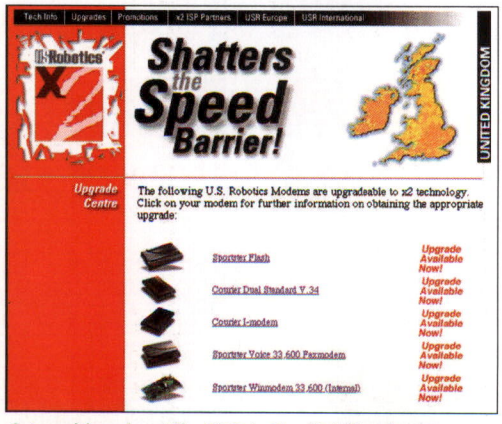


Check out your rights as a consumer at the Office of Fair Trading
www.oft.gov.uk

Anyone seen my driver?

Q I've recently formatted my hard drive. Windows 95 has successfully picked all of my devices, but it doesn't recognise the modem. I figure I need to get hold of the right driver. It's a US Robotics x2 Winmodem Voice, but I can't find the driver anywhere! Can you help?
Andy Forrest
moobrkoo@mcmail.com

Richard Baguley replies: The problem is that Windows 95 doesn't know what type of modem it is. And as the Winmodem voice was launched after Windows 95 was released, Windows 95 doesn't have the drivers on the CD. What you have to do is to go to the USR site and download the drivers – they're available from **www.usr.co.uk/product technic/downloads/sportster .html**. You have to download the software onto a floppy disk. If you then remove the modem from the list of installed modems, get Windows to search again for modems, and when it comes up with the list, click on Have Disk, it should find the drivers on the floppy disk and reinstall them. im



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If you've got Windows 95, just put the CD into your PC's CD-ROM drive and follow the simple step-by-step instructions. If you have a modem you'll be online with MSN in minutes.

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Win great prizes!

Once you've installed MSN and you're up and running online, answer the simple questions below and email the answers to montecarlo@internet.emap.com

Or you can post your answers, marked Monte Carlo competition to Internet Magazine, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

If you didn't get an MSN CD with this issue, please call (0345) 002 000 and we'll send you one free of charge. The closing date for the competition is 15th August 1998.

Runners-up Prizes

★ Six second prize winners take away free MSN accounts with free unlimited access for a year. Worth £150 each

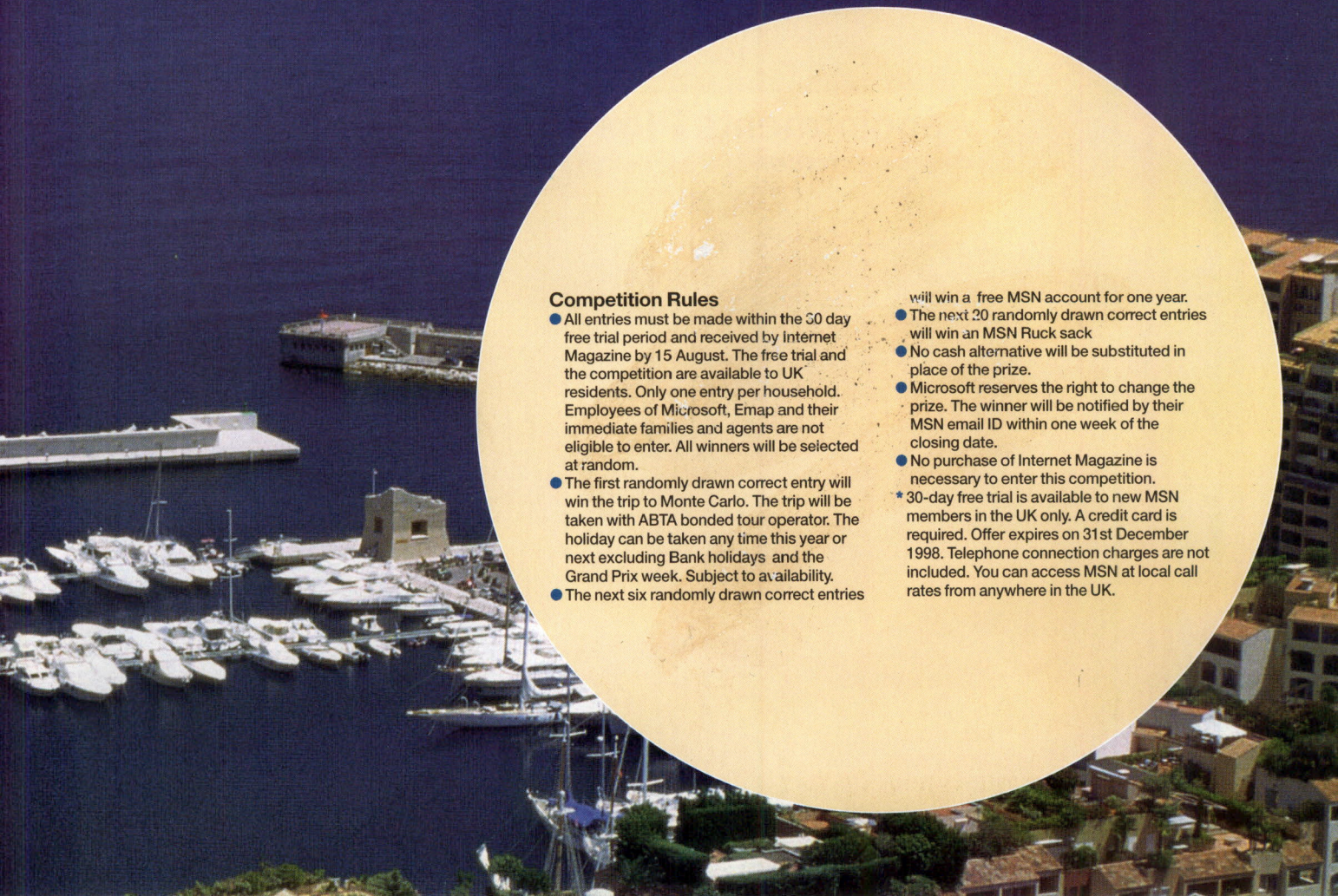
★ 20 third prize winners stride off with MSN rucksacks. Worth £15 each

The Questions

1 MSN has a new service developed with Royal Mail, what is its name?

2 Name the online encyclopedia included with MSN

3 MSN comes with a new fast email client, what is it called?



Competition Rules

- All entries must be made within the 30 day free trial period and received by Internet Magazine by 15 August. The free trial and the competition are available to UK residents. Only one entry per household. Employees of Microsoft, Emap and their immediate families and agents are not eligible to enter. All winners will be selected at random.
- The first randomly drawn correct entry will win the trip to Monte Carlo. The trip will be taken with ABTA bonded tour operator. The holiday can be taken any time this year or next excluding Bank holidays and the Grand Prix week. Subject to availability.
- The next six randomly drawn correct entries will win a free MSN account for one year.
- The next 20 randomly drawn correct entries will win an MSN Ruck sack
- No cash alternative will be substituted in place of the prize.
- Microsoft reserves the right to change the prize. The winner will be notified by their MSN email ID within one week of the closing date.
- No purchase of Internet Magazine is necessary to enter this competition.
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Who should handle your online mall?

If you want to sell from your site there are mass of companies just itching to sell you e-commerce software. Tim Rafferty helps you find out which suppliers really do offer value for money

You've read the hype about electronic commerce and you're not convinced. You can see it makes sense to set up shop on the Internet, but you're worried about people trusting their credit card details to the Net. And doesn't everyone prefer to deal face-to-face with shop assistants and business suppliers?

Come out of the dark ages. There are telephones now, and airplanes and computer, and you missed England winning the World Cup. All right, so that has nothing to do with it. But what about the fact that Amazon.com is now doing $121 million of business over the Internet every year. Yeah, yeah everyone knows about Amazon.com. It gets trotted out every time anyone says the world's gone mad and we're all going to get our shopping over the Internet.

Well, it might surprise you to know, successful though Amazon.com has become, it's actually a minnow in the idyllic blue lagoon that is Internet commerce. Dell Computers sits back and watches more that $1 billion roll in every year over the Net. Mmmm... who'd have thought that people would prefer to specify, configure and buy their new PC interactively without talking to some 17 year old who doesn't know a modem from a microwave?

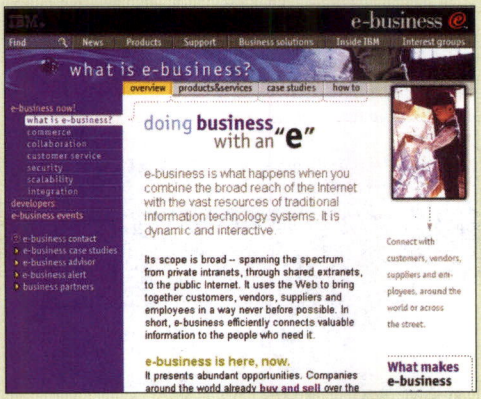
That $1 billion sounds impressive until you find out about Cisco. You might not have heard of Cisco, but every time you go on the Net you're using its hardware – it produces most of the world's routers which fling your TCP/IP packets around the globe. So it's fitting that one of the Internet's biggest hardware suppliers is also one of its leading beneficiaries – it's doing $9 million of business over the Net every day.

Managing these transactions clearly calls for better equipment than a battered 486 and some lashed together code. The big boys are ploughing millions into big, crash-proof servers and even more

Nobody ever got sacked for picking Big Blue

One persuasive voice you might listen to is IBM's. No one is making a more visible commitment to supporting e-commerce than Big Blue. The simple fact is, IBM sees e-commerce as its big chance to redefine itself as a go-getting company of the 21st century. To be fair, it's doing a grand marketing job.

IBM's strategy boils down to yet another Application Server, an absolute commitment to SET, and a set of payment utilities. Its Application Server is called Net.Commerce and its architecture is similar to Oracle's. It provides connectivity out to ODBC databases, although it only allows direct connections to IBM's own DB2 database. Links to existing transactional systems come through a set of APIs.



IBM is re-arranging itself around electronic commerce

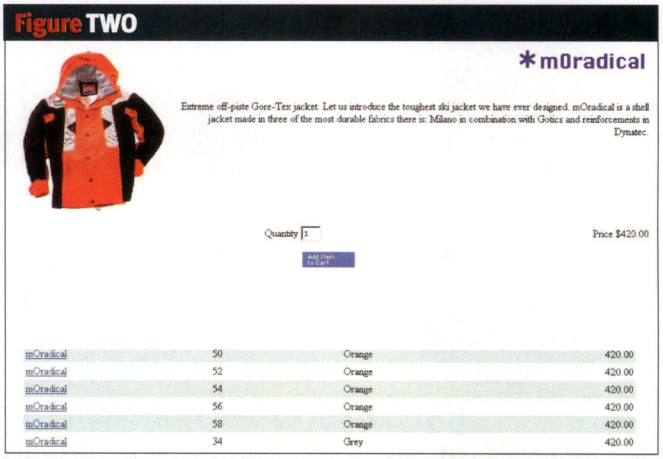
The real development effort to create shop fronts is done through the manipulation of a set of existing templates. The Store Manager has a similar set of capabilities to the Oracle product, but IBM also has a Site Manager which lets you set up a collection of shops in a single shopping mall. If the templates don't create all the pages you want, there's a Java-based design tool to create more dynamic forms to let shoppers roam around inside your store.

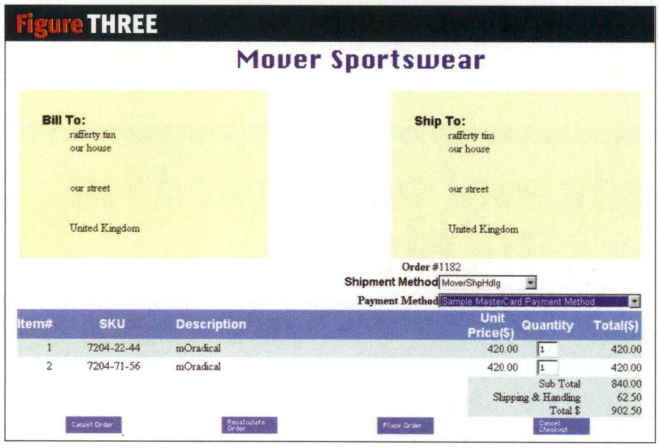
Where IBM really differs is in its direct involvement in payment methods. It was a founding member of the consortium that created the Secure Electronic Transaction (SET) protocol. The Net.Commerce server is closely integrated with a CommercePoint gateway system IBM has introduced to connect its application server with MasterCard and Visa's systems to allow merchants to process transactions without having to make manual calls for credit clearance.

As well as connecting the back-end clearance, CommercePoint includes an electronic wallet implemented as a browser plug-in. The idea behind these electronic wallets is a simple one. Your credit card company gives you a digital certificate to store in your wallet. This certificate is then sent with your credit card details to the merchant. Your certificate is then encrypted and the merchant passes your details on to the credit card company's system. This decrypts your certificate and guarantees to the merchant that you are who you claim to be. It's all very neat, but there's still a lot of integration hurdles to clear before SET can gain widespread acceptance. Some see it as adding an unnecessary level of security and think standards such as SSL alone are enough. Others are banking on the development of other forms of payment such as smart cards or cyber-cash.

But if SET does take off then IBM is, for the moment, ahead of the pack in allowing developers to put together proper e-commerce sites where most of the messy back-end stuff has already been tidied up.

Like Microsoft's, these are all big solutions and they need big systems designed for serious online businesses which cost a small fortune. Their importance lies in the way in which they are defining how commercial sites are set up and creating user expectations. In the next few articles we'll consider more affordable solutions, and look at how small to medium-sized companies can make money from the Web.





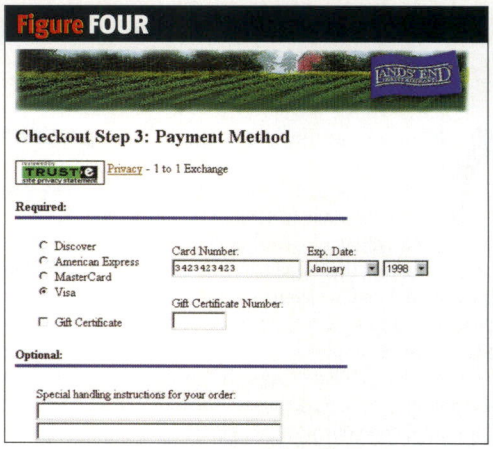


Figure 1
Netscape's Kivasuite lets you build a virtual shop on the Internet
Figure 2
As a virtual shopper, you can start by finding a nice gaudy jacket
Figure 3
Type in the address where to have your jacket delivered
Figure 4
Then all you to add are you credit card details to buy your new stuff

money into creating sites capable of handling these volumes. Last month we looked at Microsoft's set of e-commerce tools. This month it's the turn of the other big names in Internet development, IBM (see previous page), Oracle and Netscape.

The Netscape route

Netscape might not seem like an obvious e-commerce contender. Its browsers and Web servers might be ubiquitous, but its Netscape One development idea never really set the world on fire. This is a big problem for Netscape, as it's impossible to make money from browsers. Providing add-on tools and services for the existing Web server market is where the money's at for Netscape.

But when Netscape went hunting for a decent e-commerce solution, it moved quickly and has snagged one of the more promising technologies available. Kivasoft had already garnered a lot of plaudits for its Kiva Enterprise Server, and it's now been slotted into a new Netscape suite, imaginatively called Netscape Application Server 2.0 (see Application Servers box on page 114).

The Kiva part of the jigsaw is the actual application server around which you build your applications. The good news is that the Kiva comes with a bundle of 350 Java classes that you can incorporate into your own programs. But perhaps the most impressive part of Kiva is the way it's implemented. If you want to connect your application server to more than one Web server, you don't have to alter your code. On top of this, you can spread your application over a number of clustered Kiva application servers. This means that if any one of the machines goes down, your application won't even notice.

As you might expect from Netscape, there's a comprehensive range of security options already built in to look after issues such as encryption. Plus you get native drivers for all the leading relational databases to cut down on the time it takes to retrieve and store your records.

Other bonuses mean you can create code using a Developer studio that can churn out Java or C++. Also you don't have to use Netscape's Application Server to just talk to browsers. Traditional client applications can be written using Visual Basic or Powerbuilder.

Finally, if your system is so big it needs to talk to existing mainframe applications, there's going to be an Extension Toolkit which will link to transaction monitors such as CICS and Tuxedo or messaging middleware such as IBM's MQSeries.

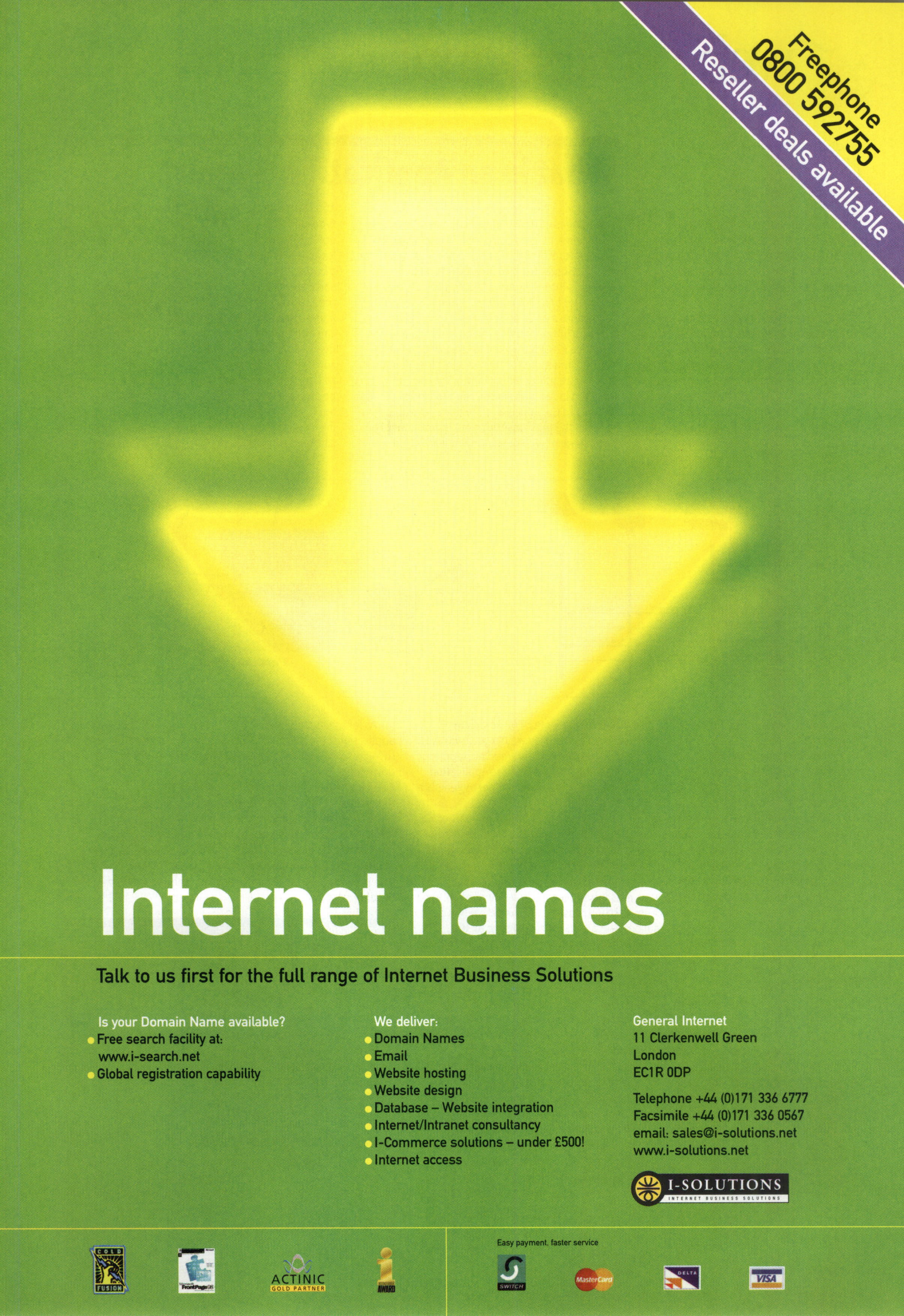
Now for the bad news. You may already have a Netscape Web Server and be hoping the Application Server promises an easy way to start trading over the Net. Think again. There's no e-commerce module to ease the integration of payment systems, so you're going to have to do a lot of code development. You could look at Netscape's ECXpert package, but that's geared more for business-to-business trading and does add to the overall cost. There's also no immediate connection with existing Netscape development tools, particularly LiveWire or JavaScript.

Finally, you're going to need a big wad of dosh to get Netscape's attention. UK prices weren't available, but in the US costs were around $25,000 per Windows NT box and $1,295 per developer. That's a lot of money (indeed, they're just about the most expensive tools of their type on the market).

What about the Oracle option?

With its Application Server, Netscape has started mixing it with the big boys. Remember it only acts as a bridge and there's bound to be a beefy database server lurking in the background. This means it's competing with the likes of Microsoft, Oracle and IBM. Netscape is hoping that the market for e-commerce development tools is expanding so fast that a significant number of database owners will integrate a set of tools from a number of different vendors.

On the other hand, Oracle is doing its best to see their customers stay inside the fold. The architecture behind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Oracle's Application Server was covered in the November 97 issue of *Internet Magazine*. Besides promising closer ties with existing programs which work with Oracle databases, it also has a 'plug-in cartridge' approach which allows Oracle, or third parties, to extend the capabilities of the Application Server to cover areas such as integration with existing transaction processing systems.

Practicing what it preaches, Oracle has now brought out two plug-in cartridges, Internet Commerce Server (ICS) and Payment Server designed, to help set up an e-commerce site. Other e-commerce tool vendors are also bringing out cartridges such as VeriFone, CyberCash and Portland Software. Oracle has also published ICX (Inter-Cartridge Exchange) which lets cartridge programmers pass information between cartridges.

For the developer, the ICS is implemented as a series of HTML templates which can be used to build an electronic storefront. For example, its Store Manager templates are the starting point for creating electronic catalogues which link to a back-end database (which doesn't have to be Oracle's) without having to mess around with table definitions. Overall, using the ICS HTML templates relies on the use of proprietary tags which the application server will understand and translate into server-side actions.

Virtual baskets

A built-in shopping cart development system also lets you build sites with the now familiar analogy of pushing a trolley around a shop. The templates provided also mean you can create in-store promotions and discounts which are automatically set up to expire at a certain time. Other aspects of the development templates include the ability to handle 'walk-in' customers or build a register of recognised shoppers – who can be targeted for further promotions in the future. There's full support for SSL3, which means credit card details sent over the Net are about as secure as they can be for the time being.

While customising HTML templates seems a pretty easy way to get going, you could turn to Oracle's Web Development suite, which works with the Application Server but allows a developer to generate Java server-side applications.

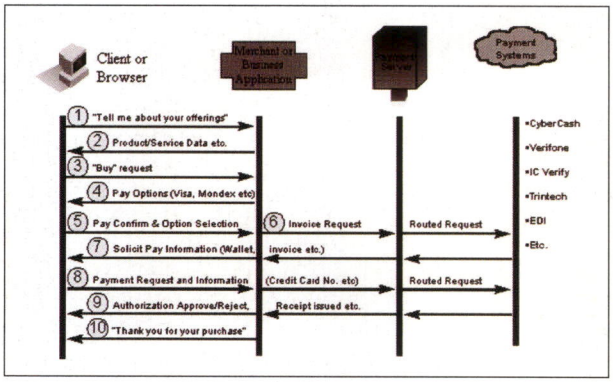
But handling money is not part of ICS. Payment settlements are left to third party cartridges such as one developed by ICVerify to manage VISA card transactions. However, Oracle has introduced its own Payment Server cartridge to act as a link between ICS applications and, in theory, all the other methods of payment. So if you want to create an application which sends orders under £10 to some form of cyber-cash system, under £1,000 to credit card handlers and over £1,000 into your accounts EDI system, then you can also use of the Payment Server function calls.

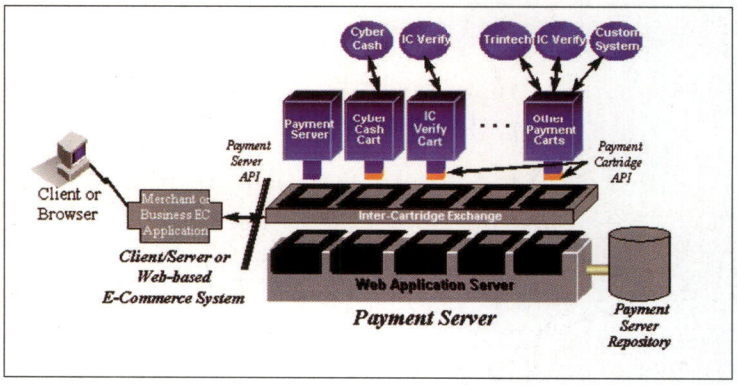
The payment handling side of the Oracle suite is still dependent on how that whole market shakes out. For the moment, most merchants are going to rely on their existing ways of collecting cash or credit. However, in contrast with Netscape, Oracle at least have a framework in place to handle whatever comes along – it's just going to be a case of promoting its architecture as a *de facto* standard for payment methods to meet.

As far as developing shopfront applications, the ICS approach is similar to Microsoft's, as it takes you some way down the road, but in the end you'll need a separate development tool to handle the extensions to your site which won't be included in the templates. But if you have an Oracle database and you're familiar with its development tools, you're going to need a big incentive to look elsewhere for an e-commerce development suite. im

What is an Application Server?

Stage one in Web development is simply creating static pages of HTML displaying graphics and text. A Web server sends pages of HTML to a browser which interprets the HTML and shows the user the results. Stage two is to include interactive elements into the page of HTML such as a data entry field or a radio button. When the user enters values into a page and returns it to the Web server, a program using the Common Gateway Interface (CGI) is invoked to read what the user entered and store the answers in a file. Usually some extra utility, which may or may not be included in the web server, can then index the file and return the information to the user who wants to recall the previously entered information. The third stage of Web development is to introduce an application server. There are several different types, but in essence they all have the same objectives. Firstly, they're there to replace the local date files held on the web server and provide a bridge to more sophisticated data storage software such as a relational database. Secondly, they can convert applications written in other languages into HTML or Java which the browser can understand. Thirdly, large e-commerce sites need application servers so they can build in some resilience to any failures along the transaction path. The failure of a Web server can't be allowed to stop a business in its tracks, so application servers should ideally be able to work in clusters; if one element fails, the whole system can keep running.





Left: The Oracle payment server uses a typical conversation structure for merchants to complete transactions Right: Oracle's application server lets merchants build up a complete Web commerce site

Coming up...

In this series from July onwards

- **Cool Tools** From simple site creation editors to back-end order processess and connections to banking systems, we'll walk you through a variety of e-commerce add-ons that you simply have to know about.\
- **Shopping carts** How to give your customers their own shopping tolley – withought any wonky wheels!
- **The Mall** How ISPs are turning their home sites into virtual malls, and how to get in on the act.

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Personalise your Web site with JavaScript

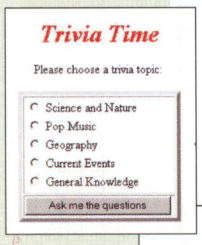
In the last of our series on JavaScript, Kathy Jinkings explores how you can use JavaScript to create a personalised Web site, tailored to your visitor's every need and wish

In last month's article we looked at how you can get your site to change dynamically, with the help of a few bits of cunning JavaScript code. This month we're putting the finishing touches to the site in an attempt to make it more interactive. We'll be showing you how you can use JavaScript to create a Web viewing experience tailored to your visitor's individual needs or personal interests.

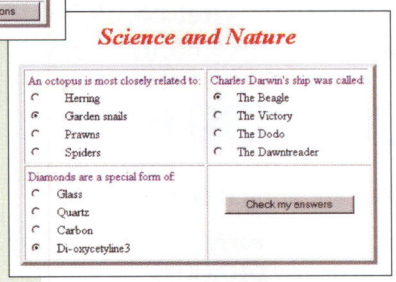
Using JavaScript, we'll be creating turbo-charged forms which lets you verify the details visitors enter in a particular field. You can then call different JavaScript routines depending on the information entered. From there you can build up new pages to create targeted information for every visitor. We'll also be showing you how to add interaction in the shape of a JavaScript calculator.

Figure ONE

```
<HEAD>
<SCRIPT Language = JavaScript>
function setuparray(num)
{           this.length = num;
            for (loop=1; loop <= num; loop++);
            {           this[loop]=0; }
            return this;}
function callquestions()
{           var loop;
            for (loop=1;loop<=5;loop++)
            { if (document.choosetopic.topic[loop-1].checked == true)
                        location = callpage[loop];}}
callpage = new setuparray(5);
callpage[1] = "science.html";
callpage[2] = "pop.html";
callpage[3] = "geography.html";
callpage[3] = "current.html";
callpage[3] = "general.html";
</SCRIPT>
</HEAD>
<BODY BGCOLOR="#ffffff>
<CENTER><H1><FONT COLOR=red><I>Trivia Time</I></FONT></H1><P>
Please choose a trivia topic:
<FORM NAME ="choosetopic">
<TABLE BORDER=5>
  <TR><TD><TABLE BORDER = 0>
    <TR><TD><INPUT TYPE=RADIO NAME = "topic">Science and Nature</TD></TR>
    <TR><TD><INPUT TYPE=RADIO NAME = "topic">Pop Music</TD></TR>
    <TR><TD><INPUT TYPE=RADIO NAME = "topic">Geography</TD></TR>
    <TR><TD><INPUT TYPE=RADIO NAME = "topic">Current Events</TD></TR>
    <TR><TD><INPUT TYPE=RADIO NAME = "topic">General Knowledge</TD></TR>
  </TABLE></TR>
  <TR><TD><INPUT TYPE = BUTTON
VALUE = "Ask me the questions" onClick = '{callquestions()}'></TD></TR>
</TABLE>
</FORM>
</BODY>
```



JavaScript chooses the next page depending on which radio button has been checked



The next page in the trivia quiz can be written using the same ideas for manipulating and checking radio sets

Using forms to move visitors around your site

The easiest way to push people around your site is to find out what your visitors are looking for and point them straight to relevant pages. You can do this using JavaScript forms, the pages that pop up depend on the details your visitors input. The example we're using here revolves around the idea of a trivia quiz. The visitor chooses a subject and then up pops up a page of appropriate questions (see Figure 1, left, for the code you need).

This code uses arrays. An array holds the information on the Web address to be called, dependent on the selection your visitor makes in the radio set on the form. You'll also notice a few new things. The form itself and the radio buttons have all been given names, using the NAME tag. This makes it easy to refer to the form and the radio set later on. The input button now has an extra parameter – onClick. This parameter lets you specify a JavaScript routine to be executed whenever the button is clicked. This routine calls a function which is defined in the header section, called callquestions.

Check out the callquestions function, and you'll see why we named our form and the fields. The form is a property of the document itself, so we can refer to it quickly as document.choosetopic.

Each field on the form is a property of the form, so our radio set is document .choosetopic.topic. Because a radio set is usually made up of several buttons, the object topic is actually another

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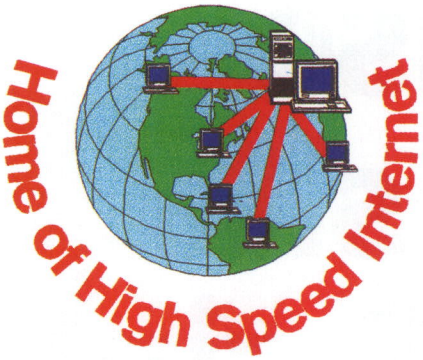

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LineOne	47	www.LineOne.net
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Uk Internet	138	www.ukinternet.co.uk
U-Net	62,63,79,115	www.uk.uu.net
Uninet	151	www.uninet.co.uk
Uninet	137	www.uninet.co.uk
User Friendly Computers	136	www.userfriendly.co.uk
UUNET Pipex	20,21	www.uk.uu.net
Virtual Computer	127	www.virtual-pc.com
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Webfusion Internet Solutions	132	www.webfusion.co.uk
Webmasters UK Network	136	www.webuk.net
Worldwide Internet Publishing Corp.	125	www.wipc.net

array with one entry in the array for each of the buttons. Each element of the array has yet more properties – the selected one that's used here, is set to either true or false, depending on which buttons was clicked.

The function loops round checking each button in the radio set in turn. When it finds the one selected by the visitor, for which the selected property is true, it calls up the appropriate page.

You can use the same concepts of forms and checking radio boxes to present your visitor with a list of multiple choice questions on the chosen topic and see whether they've got the answers right.

How to build your own JavaScript calculator

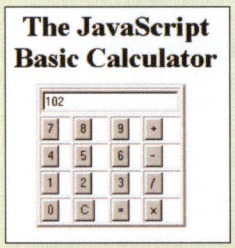
JavaScript also lets you update the fields dynamically, based on your visitor's input. A good example of this kind of application is a calculator (see the code in Figure 2 below).

The calculator again uses the onClick method to call JavaScript functions. Each of the numbers and operators is an input button and because we don't need to refer to them directly, they haven't been named. The text box at the top is where the calculation is displayed and is referred to as itext. Whenever you do a new calculation, the routines set the value property of itext, and the new value automatically appears in the calculator.

As itext is updated by the calculations, you don't want visitors typing their own values in and confusing

Figure TWO

```
<HTML>
<HEAD>
<SCRIPT Language = JavaScript>
var memory1;
var functype;
var set;
functype = "0";
set="0";
function num(thisval)
{           var curval;
            var numval;
            numval = eval(thisval);
            curval = eval(document.calcul.itext.value);
            if (curval == 0 || set == "1")
            {           curval = numval;}
            else
            {           curval = curval*10;
                        curval = curval + numval;}
            document.calcul.itext.value = curval;
            set="0";
}
function clearvals()
{           memory1 = 0
            document.calcul.itext.value = 0;
}
function func(type)
{           if (functype != "0") doit();
            functype = type;
            memory1 = eval(document.calcul.itext.value);
            document.calcul.itext.value = 0;
}
function doit()
{           var curval;
            if (set == "1" || functype == "0") return;
            curval=eval(document.calcul.itext.value);
            if (functype == "/") memory1 = memory1/curval;
            if (functype == "+") memory1 = memory1+curval;
            if (functype == "-") memory1 = memory1-curval;
            if (functype == "x") memory1 = memory1*curval;
            curval=memory1;
            memory1=0;
            functype="0";
            document.calcul.itext.value = curval;
            set = "1";
}
</SCRIPT>
</HEAD>
<BODY BGCOLOR="#ffffff>
<CENTER><P>
<H1><B>The JavaScript Basic Calculator</B></H1>
<TABLE BORDER=3>
<FORM NAME=calcul>
<TR><TD COLSPAN=4><INPUT TYPE=TEXT NAME=itext VALUE="0"
          onFocus="{document.calcul.itext.blur();}"></TD></TR>
<TR><TD><INPUT TYPE=BUTTON NAME="SUBMIT" VALUE=" 7 "
onClick="{num(7)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" 8 " onClick="{num(8)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" 9 " onClick="{num(9)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE =" + " onClick="{func('+')}"></TD></TR>
<TR><TD><INPUT TYPE=BUTTON VALUE=" 4 " onClick="{num(4)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" 5 " onClick="{num(5)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" 6 " onClick="{num(6)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE =" - " onClick="{func('-')}"></TD></TR>
<TR><TD><INPUT TYPE=BUTTON VALUE=" 1 " onClick="{num(1)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" 2 " onClick="{num(2)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" 3 " onClick="{num(3)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE =" / " onClick="{func('/')}"></TD></TR>
<TR><TD><INPUT TYPE=BUTTON VALUE=" 0 " onClick="{num(0)}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" C " onClick="{clearvals()}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE=" = " onClick="{doit()}"></TD>
     <TD><INPUT TYPE=BUTTON VALUE =" x " onClick="{func('x')}"></TD></TR>
</TABLE>
</FORM>
</BODY>
</HTML>
```



This simple calculator is surprisingly easy to program

Figure THREE

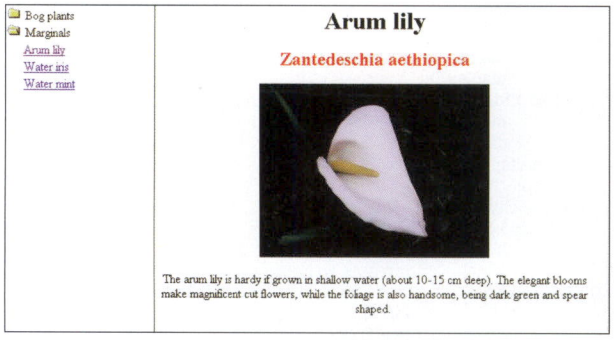
```
<HTML>
<HEAD>
<SCRIPT Language = JavaScript>
var mframe;
mframe=parent.dir.document
function option ()
{           this.desc = 0;
            this.options = new setuparray(3);
            this.selected = 0;}

function setuparray(num1)
{           this.length = num1;
            for (loop1=1; loop1 <= num1; loop1++);
            {           this[loop1]= 0;           }
            return this;}

function menuarray(num)
{           this.length = num;
            for (loop=1; loop <= num; loop++)
            {           this[loop]=new option(); }
            return this;}
function cfld(cnum)
{           menuopts[cnum].selected = 0;
            display();}
function ofld(cnum)
{           menuopts[cnum].selected = 1;
            display();}
function display()
{ var loop;
 mframe.clear();
 for (loop=1;loop<=2;loop++)
            if (menuopts[loop].selected != 0)
            {           mframe.writeln("<A
HREF=javascript:parent.frames.control.cfld("+loop+");>");
                        mframe.writeln("<IMG SRC=ofolder.gif
                        BORDER=0></A>" );
                        mframe.write(menuopts[loop].desc +
                        "<BR>");
                        for (loop1=1;loop1<=3;loop1++)
                        {           if
((menuopts[loop].options[loop1])!="")
                                    { mframe.writeln("<IMG
                                    SRC=onepixel.gif WIDTH=18
                                    HEIGHT=0>");
                                      mframe.writeln("" +
menuopts[loop].options[loop1]+"<BR>");}}}
            else
            {           mframe.writeln("<A HREF=javascript
                        :parent.frames.control.ofld("+loop+")>");
                        mframe.writeln("<IMG SRC=cfolder.gif
                        BORDER=0></A>");
                        mframe.writeln(menuopts[loop].desc +
                        "<BR>");}
}
menuopts = new menuarray(2);
menuopts[1].desc="Bog plants";
  menuopts[1].options[1]="<A HREF=mari.html TARGET=main
  >Marsh Marigold</A>";
  menuopts[1].options[2]="<A HREF=frit.html TARGET=main
  >Fritillary</A>";
  menuopts[1].options[3]="<A HREF=gclub.html TARGET=main
  >Golden club</A>";
menuopts[2].desc="Marginals";
   menuopts[2].options[1]="<A HREF=alily.html TARGET=main
   >Arum lily</A>";
   menuopts[2].options[2]="<A HREF=wiris.html TARGET=main
   >Water iris</A>";
   menuopts[2].options[3]="<A HREF=wmint.html TARGET=main
   >Water mint</A>";
display();
</SCRIPT>
</HEAD>
<BODY></BODY>
</HTML>
```

everything. To stop this happening, an onFocus routine has been added to the field, just like the onClicks. The onFocus routine is executed whenever the user enters that field, either with a mouse or by tabbing to it. As there's not much to do when this happens, the JavaScript command is just included as the onFocus parameter. Whenever that field is clicked on, the Blur() method is invoked, which firmly sends the focus elsewhere.

There are a lot of different functions here, but don't worry too much, each one is simple. When visitors click on a number, the function num multiplies the current value in itext by 10 and adds the new number (because it's a decimal calculator). When one of the 'do something' keys like plus or minus is clicked, the function func stores the current number in memory and remembers which operation was requested. When you hit the equals button, the remembered function is used to produce the result.



The sub-options of the menu can be viewed and opened by opening folders, which can then be collapsed

One problem with a calculator is that JavaScript isn't always too sure whether something is a number or a string. Numbers 1 and 2 added together make 3, but strings 1 and 2 added together make 12!

To get sensible results from the calculator, it's essential that JavaScript realises the fields are numbers. To do this you need to use the eval function. The command eval(1) + eval(2) will always result in 3. If you want to do the opposite, then just append a null string to the beginning – "" + 1 + 2 will always be 12.

Building a Windows-style navigation menu

Our final bit of JavaScript sets out to build a Windows-style collapsible folders menu. This is a handy technique to learn as it allows you to present lots of menu options in an accesible way. The code you need to create the menu is all in Figure 3 on the previous page.

This code is designed to run in a frame set and should be started up in a frame named control, which is zero columns wide and therefore invisible to the visitor. You should name a second frame dir, and this is where the menu will be displayed. The third and final frame will be called main, and this is where the page the visitor choses from the menu is displayed.

A number of different ideas come together in this application. This time, the array creation routine sets the value of each element to be 'new option'. This function, called option, also sets up an array, so the end result is an array which contains two top-level properties, desc and selected – and another subarray, options. This means we've got a two-level menu.

The menu is written to a different frame, dir, using the document.writeln() method. The difference here is we've defined a variable, mframe, which points to the appropriate document. If you want to change the names of the frames, you now only have to change the one line where mframe is set.

We use the selected property to decide whether to draw a closed folder or an open one. If it's open, all the submenu options are displayed. Each folder picture is actually an input field on a form with an onClick defined. When the reader clicks on the folder, the selected property is toggled, so open folders close and closed folders open. The interesting thing to notice is that although the code has been written into the frame dir, the onClick calls a routine from the frame control (where the code above is still running). Not only can you write to different frames, but you can also run JavaScript code from them. im

ON THE CD You'll find all the JavaScript code in this article ready-typed in on our cover CD

Where to go from here

In this series we've looked at the basic building blocks of JavaScript. There are some obvious ways you can build on the applications we've looked at; try adding a decimal point to the calculator for starters, or use the interactive forms to provide a set of pages that diagnoses a problem for the visitor.

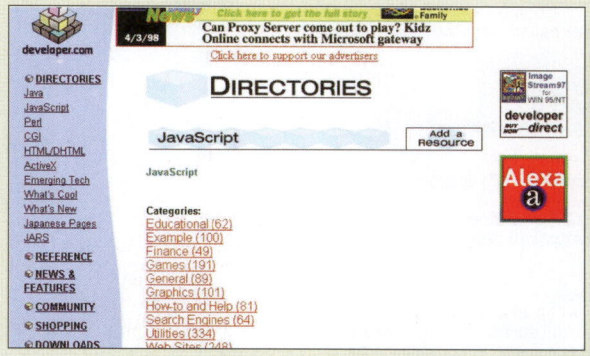
JavaScript isn't going to go away. Now that it's become a standard and acquired the new exciting name of ECMA-262, it's going to become an essential part of the Web. This is good news as it means you can be sure the next generation of browsers won't make the code you've painstakingly created obsolete.

If you want to know where to go from here, check out some of the online JavaScript resources listed below.

● The JavaScript Guide contains lots of JavaScript building blocks that can be freely used. The site does contain information about JavaScript 1.1 (that's Navigator-3 style), but remember lots of people are using old browsers. Leading-edge technology might be fun, but you still want as many people as possible to be able to read your site
http://home.netscape.com/eng/mozilla/3.0/handbook/javascript/

● The JavaScript directory is home to an extensive array of code that illustrates just how flexible the script is. You'll find examples of code to play games, manipulate graphics, do calculations, interrogate search engines and lots more
www.developer.com/directories/pages/dir.javascript.html

● The newsgroup comp.lang.javascript is packed with people who will help with any JavaScript problems. It's always reassuring to find you're not the only person wrestling with a tricky bit of code
comp.lang.javascript



The JavaScript directory is packed with new ideas and code

faxback

This series has previously covered:

● How to get JavaScript onto your site (April 98)

● How to make your site dynamic with JavaScript (May 98)

There are two easy ways to get hold of these articles. The old tech way is to use our Faxback service (see page 129). The hi-tech way is to go to our Web site and download them, for the very reasonable price of 75p.
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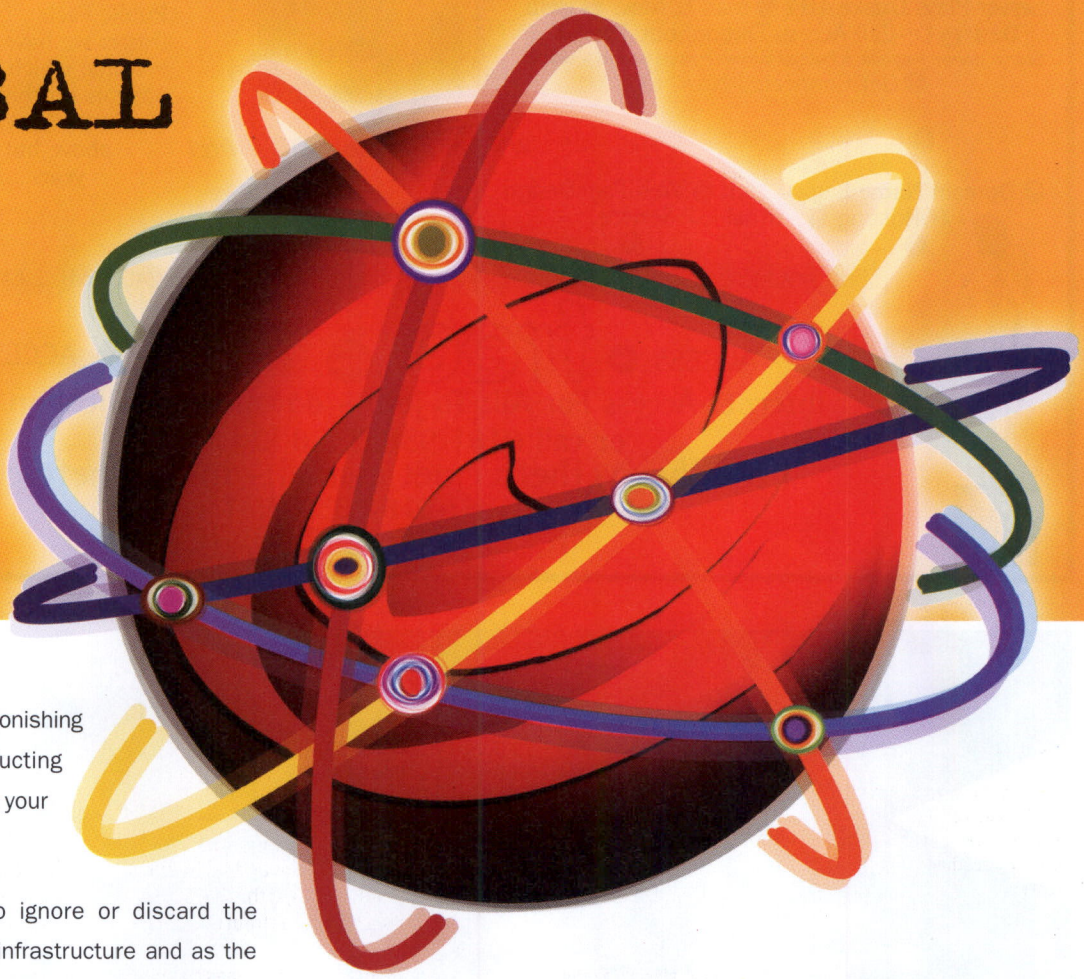
The FASTEST way to get your BUSINESS APPLICATIONS GLOBAL



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Getting the best from an ad agency

Traditional ad agencies are catching on to this Web site business, and can create a whole marketing package for you. Steve Shipside finds out how to get your money's worth out of them

Traditional ad agencies haven't always had a comfortable relationship with new media and the Web. Stories abound of agencies poring over every detail of print campaigns but leaving their Net campaigns in the hands of the office junior. Four or five years ago conventional wisdom had it that whoever knew how to use a word processor could be appointed head of new media. Once safely in the saddle, these know-nothings would then compound the sin in one of two ways. They would either oversee the production of complete dross or they would cheerily turn to specialist new media designers and tell them they wanted their award winning cinema advert to run full screen, full resolution, full speed from their Web site.

The good news is things have got better. Some ad agencies have got up to speed, brought new media safely under their mantle, and applied their expertise in branding and media buying to it. The bad news is that these agencies are still in the minority. "I'd say there are about four or five that have distinguished themselves in this area," notes Jane Ostler, director of MindShare Digital (the digital offspring of a joint venture between Ogilvy and Mather, and JWT). O&M, incidentally, is one of the agencies that has a proven new media track record. "There are still just a handful that come up with really good Web stuff – the likes of O&M, BBH, and Mediapolis," concurred John Owen, who runs the new media section of the ad industry paper Campaign.

Even multimedia savvy agencies like O&M, Lowe Howard Spinks, or BBH don't produce their own new media products, they commission digital design companies to do the work. Which isn't so odd, when you think about it, since they don't film adverts or take the photographs either. "We don't make material in house, instead we work with a wide range of production companies" confirms Ostler. "We outsource all the production", agrees Andrew Walmsley, head of new media at BBH. "That gives us the flexibility to work with whoever is relevant for the project. It enables us to have a much more flexible offering for our clients."

Ostler explains that this also leaves agencies free to focus on the essentials. "What we aim to do is stick to our core areas, which are brand communications, media buying, and consulting. We do have an understanding of digital media - O and M has been working in the area for three years now and most of our clients are blue chip – we've done projects for Ford, IBM, Guinness, and Kimberley Clarke [that'll be Huggies to you and me]. We've split our services into different areas, one of which is online media planning and buying, others include consultancy and site development."

What you can expect

So what kind of service does an agency like O&M offer you? First up, these companies are well placed to use their media buying expertise. "With Ford, for example, we used a lot of banner ads. Our media planners have to determine the campaign objectives and client needs, as with any medium. We have to determine if it's a question of qualitative brand building or lead generation. Bearing in mind the target audience we then place the ads." A lot of the clients using the ad agencies are multinational, and so those ads have to go out across a great many markets and different languages, which is where the marketing experience and resources of a big agency really start to tell.

Ad agencies can also see the big picture. The Web site is just one piece of the marketing mix. "All of the Internet elements; targeting, strategy, setting objectives must be part of an integrated marketing strategy" agrees Andrew Walmsley of O&M. "That, in turn, is about much more than capturing the visual elements of a brand online. Getting the logo right is just the starting point, nothing to pat yourself on the back about."

"People have long seen the importance of building synergy between what they do on press and TV," continues Walmsley, "and now it makes sense to establish precisely that same synergy in new media. A Web site is simply another manifestation of the brand experience for a consumer. If all of your marketing isn't singing from the same hymn sheet then it's going to be counter productive. If an ad agency is scripting all your other activity they should certainly be involved."

Saatchi & Saatchi has had ground-breaking ad campaigns over the years, but it's not a name that springs to mind when it comes to Internet advertising. Dubious taste in background effects, too

The most concrete example of this cross-media approach is the Levis White Label campaign. You know the one, funky-Monkees-type youngsters zoom around in a psychedelic hearse. The key was the setting of the ad in the '60s and the concept of linking Levis with fun. BBH gave much of the new media work to Antirom, who produced a mini CD-ROM and a Web site. Inevitably this involved using a digital version of the film, but bandwidth limitations dictated a different approach. Antirom settled on ShockWave 'toys' mixing '60s sounds and fashion on screen.

One way to judge how close the partnership is between a traditional agency, and its new media agency, is to see how early the latter is brought into the negotiations. "We work with clients to help write the brief and, yes, we would include the digital and technical specialists right at the beginning and again as often as necessary," says Walmsley.

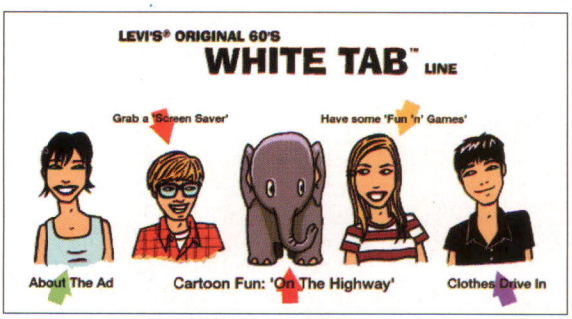
"We've just signed up with Tango" says Clive Jackson, Creative Director and CEO of Global Beach. Global Beach is an unusual blend of digital media house (it built Hewlett Packard's digital Mopy fish) and advertising consultancy. "With Tango, Howell Henry is the above the line agency (responsible for the unforgettable tag line) and we are the digital creatives. The way it works is that those blue sky ideas usually come down from the traditional agency and its creatives, but they often don't understand the medium. And that's where we get called in – right at the beginning." Always? "Ah, no, it's not uncommon be told someone wants a Web site, at which point we have to reverse the process and back up the chain half a dozen steps to establish the whys and wherefores that will dictate what we do." It seems that agencies are bringing in the digitals earlier than ever. "When we were brought in by Saatchi for the Hewlett Packard work we came in as a partner agency at the top line strategic brief."

It's clear that what a traditional ad agency should bring to the punter's party is the core skillset of consultancy, branding advice, and media buying. If your agency is doing a good job for you in the realms of traditional media, then they should be able to do the same with new media. Obvious really. So why have so very few of them have made a name for themselves in the digital domain?

Partly it's cultural snobbery. At one time, if you had a computer on your desk in an agency, you were in admin. And many creatives balked at the thought of learning about technical issues. However, some progress has been made. "The kick off was that we started TAPS, the premier Web site for online recruitment" explains Rob Lowe, taking a break from Hollywood stardom to put in a spell as Media Researcher for TCS. "Now we have master classes within the agency teaching each other how to research, use, and promote new media to clients. We use traditional media, but we're a young agency, we use the Net a lot ourselves, and if there's an audience for a medium then we're prepared to look at it."

Over at the traditional agencies there's still some work to be done, "everyone in the agency has Web access now, and we're working hard to bring up the general level of knowledge so it becomes a part of their media repertoire as consumers" explains Walmsley. Like many from the mainstream, he also feels it's better to educate a marketeer about the Net, than teach marketing to a Webmaster. "It's definitely easier to do it that way than to graft strategic marketing skills onto someone who understands what is technically available."

Things can only get better. As the Net gains critical mass it will move squarely into the marketing mainstream. The advent of digital TV is driving many agencies to review their understanding of multimedia and no agency will admit to not having a digital TV strategy. "The potential benefits of new media are great," declares the Rt Hon Chris Smith MP, Secretary of State for Culture, Media, and Sport, in a letter to the participants of a recent brainstorming session on the industry. "In terms of the economic benefits alone, digital technology is considered to have been responsible for one third of economic growth in the US over the last five years. The economic benefits will be felt even more acutely in the creative industries, where the ability to access and communicate a wide range of resources and information will present a distinct advantage to creative innovative countries like our own." Sadly, there was no one present from an ad agency to hear the message. im



The Levis White Tab campaign – a satisfying example of agency (BBH) and digital designers (Antirom) working hand in hand to produce fun Web work that extends the brand

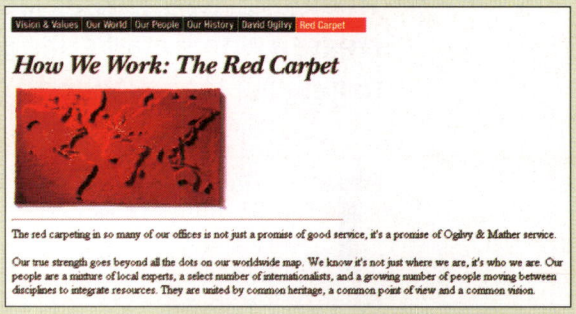
Managing advertising for Ford

A global company like Ford takes brand positioning very seriously. Ensuring a consistent branding across all media is a priority, so the company naturally leans towards an established traditional agency. Just to make life easier, the company that handles their traditional campaigns happens to be Ogilvy & Mather, one of the few UK agencies with an equally desirable reputation when it comes to digital media.

"Ogilvy & Mather look after our media buying, and all the banner ad production" explains Nicola Dady, head of direct marketing at Ford. "We've just finished putting the final touches to the purchasing plans for '98, for all our on-going and launch campaigns. In terms of the budget, we treat digital media as a completely integrated part of the marketing mix, never in isolation." Naturally this is a tempting approach from a budgetary point of view, allowing the whole campaign to be planned at once, with the trusted buyers, O&M, directing where money is best spent. It also ensures consistency of message. "Yes, we found it appropriate that the campaign should cut through the line for consistency," commented Dady.

Ford, incidentally, prefers not to give out any indication about just how much money that might add up to. It is fairly clear, however, what it expects in return for such undisclosed sums. "We've had a site and online presence for a couple of years but we increased the activity last year with the O&M team trying different approaches to brand building. We've tried different tactics and types of banners, and studied the results to see what impact there was on recognition. Now we're pretty clear about what we want to do online."

And why online at all? "Because we're attracted to the quantifiable nature of it, you can see at once what effects you're having on traffic by counting click-throughs, plus you have the chance to collect data about customers."



O&M, the red carpet agency, also gets widely cited as one of the more new media friendly in the UK

TCS – an advertising company that "doesn't so much surf the Net as power around it in souped-up Hovercrafts," apparently

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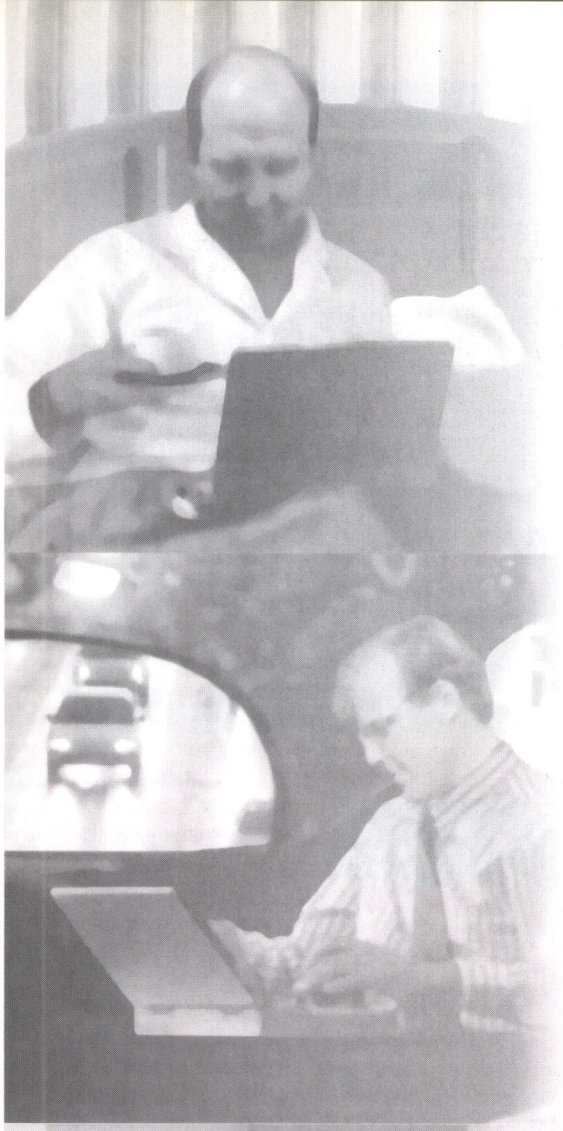

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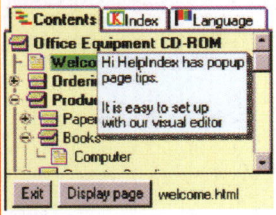

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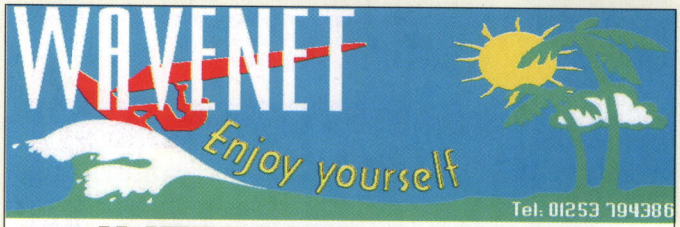

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The *Internet Magazine* Lab tests put the UK's top service providers through a rigorous set of performance tests. Find out how your provider scored in our exclusive trials or turn to page 144 to find out which ISP wins our award for most consistent performance over the last six months

Choosing an ISP is a tricky business. One of the few areas of differentiation is performance. Every month *Internet Magazine* tests the performance of more than 100 service providers. We check out their availability by tracking the busy tones we get when we try to connect. Once we're connected, we test out Web speeds by timing how quickly we can download four Web pages.

These tests are run repeatedly over a period of about three weeks every month. This means we get a good indication of an ISP's performance over the test period.

And the winner is...

This month's winner is London-based Freedom To Surf, the dial-up side of MERIT Internet. Its victory comes after several months of steadily climbing up the charts. The company came in at eighth place last month and 17th the month before.

"We've been progressively upgrading," says Chris Panayis of Freedom to Surf. "We use the Ebone backbone and it's been getting better, which bodes well for our customers. And because Ebone is a non-profit organisation, it pours its money back into the network."

The Ebone is a pan-European network. This goes some way towards explaining why Freedom to Surf perfomed so well this month, as our test sites included one in Europe and one in Ireland. You'll find more details on Ebone at **www.ebone.net.**

Following close behind is Technocom, which jumps to second place from 13th last month. Technocom achieved a 100 per cent availability rating. This means we didn't encounter a single busy tone over the entire three-week test period.

"We've increased our dial-up lines by 150," says Nigel Ramsey of Technocom. "We've also moved our dial-up system onto a 100Mb backbone and separated it from the rest of the network. We've also recently doubled our US bandwidth."

Freedom to Surf

BT Internet improved on its recent poor performance with a 21st place. BT claims to be investing a lot of money in the service, including increasing the number of telephone lines allocated to it. This seems to be paying off, with a 95.83 per cent availability rating and an acceptable average Web speed of 20.18 seconds.

This month's fallers

Last month's winner,Netcom, falls to a disappointing 66th place, despite a 100 per cent availability rating. It was Web speed that caused the problem – at 29.73 seconds, it's nearly three times slower than Freedom to Surf.

Meanwhile, CableNet (which came second last month) falls to 34th place, despite a 100 per cent availability. Again, this drop can be put down to poor Web speed figures.

UUNet's less pronounced fall to 24th place was caused by a combination of availability and Web speed. Although both are not problematic, a poorer than usual performance in both areas pushed the ISP down a few places.

CYBERphile explains its poor performance over the past couple of months (62nd place this month and 19th last) on a recent upgrade of its connectivity.

"During relocation of servers in an effort to improve speed and efficiency, CYBERphile suffered a slight loss in connection during testing this month," says Sarah Horton of CYBERphile.The company claims these problems have now been fixed and hopes to be moving back up the ratings next month.

Newcomers

We welcome two new providers to the tests this month – WaveNet and Intensive Networks. Both companies provide 100 per cent local call coverage.

This month's averages

This month, the average availability of all the providers tested was 95.56 per cent, up slightly from last month's 94.85 per cent. Thirty providers (around a third of the total) achieved a 100 per cent availability rating, with only 15 providers falling below 90 per cent.

The overall average Web speed was 27.58 seconds, with an average for each of the sites tested of 21.01, 4.32, 69.43 and 15.54. As the Web pages tested change each month, there can be no direct comparison with last month's figures.

Errors and corrections

Technical problems with two ISPs mean they're not listed this month: Kendal Computer Centre and Web Factory. We were also unable to start testing ENTANET's service. Look out for all three companies next month.

We need you!

If you work for an ISP that would like to be included in out tests, or have any suggestions on how the tests should develop, please contact Richard Baguley at **richardb@internet.emap.com**

Points to remember

Although our tests provide a comprehensive overview of the performance of ISPs, there are a few points you should bear in mind when using these tests to decide which ISP to choose. Our tests are designed to determine the quality and speed of the infrastructure of the ISP – we don't test its software, technical support, pricing or other aspects of the service it offers. We tested these factors in our ISP of the year feature in our December 97 issue. You can get hold of this article from our Faxback service. See page 129 for details.

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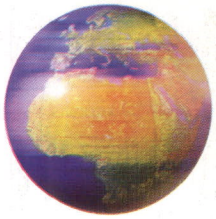

This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This month	Last month	Provider	Telephone	Availability (per age)	Average Web speed (secs)	Cicada Average	University Average	Euro Average	IIA Average
1	8	Freedom To Surf Plc	(0181) 881 2111	98.63%	11.90	10.08	2.72	32.66	2.13
2	13	Technocom	(01753) 714 200	100.00%	12.25	8.63	2.44	32.02	5.89
3	14	Oxford CommUnity Internet	(01865) 856 000	100.00%	13.09	9.39	3.81	31.90	7.24
4	51	Wave Rider Internet Plc	(0121) 603 3888	100.00%	16.85	11.27	6.46	35.60	14.06
5	17	REDNET	(01494) 511 640	93.42%	17.10	14.76	2.59	38.71	12.35
6	10	SAQ Network Services	(0800) 801 514	100.00%	18.52	17.95	2.52	40.06	13.53
7	34	NetDirect Internet	(0181) 305 5000	98.61%	18.37	17.38	3.13	41.02	11.95
8	11	Thrust World Ltd	(0800)9805454	100.00%	18.8	18.32	2.56	41.08	13.23
9	20	Sonnet Internet	(0171) 891 2000	100.00%	19.21	19.30	2.87	41.11	13.55
10	46	TriNET	(01539) 731 000	91.46%	17.59	18.78	5.93	35.38	10.29
11	9	CIX	(0845) 355 5050	94.67%	18.29	16.20	2.83	42.23	11.90
12	5	Primex	(01908) 643 597	100.00%	19.65	18.17	3.20	44.34	12.86
13	4	Cable Internet	(0500) 541 542	93.42%	18.74	16.92	3.10	41.69	13.24
14	52	Datanet	(01252) 810 081	94.74%	19.01	15.02	5.05	43.95	12.03
15	22	ProWeb	(0500) 636 343	97.30%	19.75	17.57	3.03	46.99	11.42
16	6	Nildram	(0800) 072 0460	100.00%	20.43	17.67	4.03	43.82	16.22
17	96	PowerNet	(0500) 011 501	87.50%	18.06	15.67	3.67	42.83	10.08
18	42	The Internet Business	(01232) 424 190	96.05%	19.90	20.20	3.73	40.96	14.70
19	56	Pipemedia OnLine	(01455) 828 218	89.66%	14.76	12.60	3.52	35.83	7.10
20	27	Internet Central	(01270) 611 000	100.00%	20.83	18.90	3.62	46.97	13.84
21	31	BT Internet	(0800) 800 001	95.83%	20.18	18.63	3.72	48.05	10.31
22	23	DIALNet	(0800) 881 881	97.26%	20.64	17.73	2.84	50.00	11.99
23	55	SoftProg NET	(0181) 788 0656	98.51%	21.00	17.84	2.89	42.65	20.62
24	7	UUNet (Pipex Dial)	(0500) 474 739	98.51%	21.06	17.57	2.98	53.81	9.88
25	3	Wyenet Internet services	(01989) 762 476	100.00%	21.53	20.38	3.15	47.41	15.20
26	43	Onyx Internet	(0345) 715 715	100.00%	22.46	18.93	3.25	53.11	14.56
27	62	Prestel Online	(0990) 223 300	95.71%	21.53	17.35	5.15	50.27	13.36
28	12	HiWay	(01635) 573 300	97.06%	21.94	19.53	3.52	49.00	15.72
29	68	Pavilion Internet	(01273) 607 072	100.00%	22.67	21.39	2.71	52.66	13.93
30	18	Maidenet	(01628) 825 757	100.00%	22.92	20.11	3.49	53.63	14.46
31	48	Pinnacle Internet	(01293) 613 686	98.53%	22.88	21.74	4.61	52.02	13.15
32	40	Direct Net @ccess	(01232) 201 555	100.00%	23.56	20.16	3.69	56.34	14.07
33	65	Demon Internet	(0181) 371 1234	95.59%	22.68	19.70	3.04	55.27	12.70
34	2	CableNet	(01424) 830 700	100.00%	24.17	19.57	7.93	53.35	15.82
35	19	Metronet	(0181) 426 4446	100.00%	24.35	24.53	4.47	46.68	21.74
36	71	Global Internet	(0870) 909 8041	85.19%	20.86	18.83	3.41	48.59	12.63
37	59	Thames Global Internet services	(01344) 641 627	100.00%	24.60	22.92	4.82	49.39	21.26
38	66	Vossnet	(01753) 737 800	91.03%	22.57	21.46	4.04	52.84	11.93
39	53	Frontier Internet Services	(0171) 536 9090	93.42%	23.50	20.61	7.33	45.56	20.50
40	21	Eclipse Networking	(01392) 202 345	100.00%	25.17	22.89	4.62	56.50	16.67
41	54	Direct Connection	(0800) 072 0000	97.26%	24.76	20.84	2.90	62.30	13.00
42	77	Total Connectivity Providers	(01703) 571 300	100.00%	25.59	20.77	3.99	61.84	15.77
43	72	Inter@lpha	(01703) 363 200	80.72%	20.79	18.86	3.47	47.38	13.45
44	49	Cyber ware	(01733) 765 005	93.51%	24.37	20.96	3.86	56.49	16.19
45	38	WSS Internet Access	(01793) 420 764	94.74%	24.73	23.67	3.77	59.22	12.25
46	32	UK2Net	(01372) 844 644	95.95%	25.05	22.79	3.61	59.79	14.02
47	24	CompuServe	(0990) 000 200	89.47%	23.46	21.77	4.08	37.54	30.46
48	N/A	Wavenet	(01253) 794 386	100.00%	26.25	21.00	4.00	65.00	15.00
49	75	Easynet	(0541) 594 321	91.14%	24.00	22.98	3.27	56.10	13.65
50	63	Poptel	(0171) 923 9465	94.37%	24.88	23.63	4.17	54.21	17.52
51	25	Intonet	(0181) 941 9195	92.31%	24.43	21.00	3.73	56.48	16.52
52	50	U-Net	(01925) 484 444	98.46%	26.12	24.45	3.11	64.27	12.66

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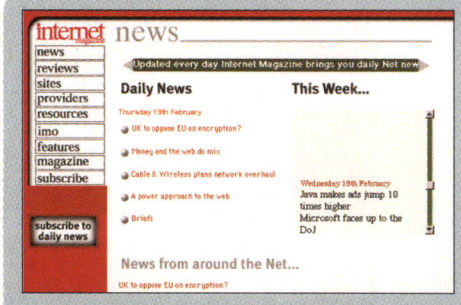

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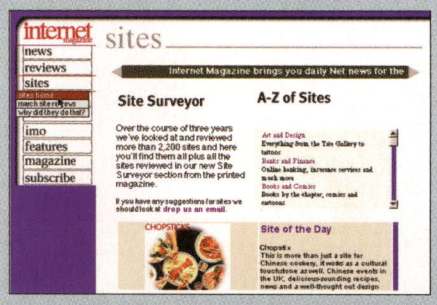

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provider lab tests

This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This month	Last month	Provider	Telephone	Availability (per age)	Average Web speed (secs)	Cicada Average	University Average	Euro Average	IIA Average
53	29	LineOne	(0345) 777 464	86.84%	23.06	20.70	4.52	54.78	12.23
54	47	Enterprise	(01624) 677 666	85.37%	22.69	19.64	3.59	52.60	14.93
55	33	Power Internet	(01908) 605 188	100.00%	26.60	20.21	4.73	67.48	13.97
56	61	NewNet Ltd	(07000) 639 638	100.00%	27.12	18.67	3.06	72.57	14.21
57	16	Moonlight Internet Services	(01276) 856 868	94.74%	25.70	21.93	4.03	61.16	15.69
58	37	Cerbernet	(0171) 360 8000	96.00%	26.17	18.71	3.10	68.94	13.94
59	91	FreeDotNet	(0181) 568 3377	98.61%	27.34	18.90	8.89	70.89	10.70
60	86	WorldWide Web Services Ltd	(01784) 898 800	95.95%	26.75	24.31	4.37	64.90	13.41
61	95	Computalynx Ltd	(01604) 231 437	94.67%	26.42	20.68	4.35	65.70	14.97
62	90	CYBERphile Internet	(01543) 454 840	98.46%	27.59	23.17	5.11	66.56	15.54
63	26	I-Way	(0171) 734 5734	85.33%	24.23	19.19	3.35	60.14	14.23
64	15	Mistral Internet	(01273) 747 432	96.77%	28.05	19.36	3.78	77.73	11.35
65	41	Web Plus	(0345) 932 758	95.45%	27.86	23.78	10.84	57.95	18.89
66	1	Netcom Internet	(01344) 395 600	100.00%	29.73	24.41	3.68	74.03	16.79
67	102	Internet UK	(01827) 711 722	98.65%	29.59	26.33	5.42	66.85	19.77
68	93	Aviators Network	(01727) 868 468	94.67%	28.53	20.94	4.22	73.41	15.55
69	57	Madhouse Net	(0800) 074 8283	100.00%	30.60	24.80	2.83	67.20	27.57
70	82	Northants Computer Centre	(01604) 622 539	94.74%	29.50	26.33	5.61	68.76	17.31
71	35	Telinco Internet Services	(0800) 542 4343	95.77%	29.93	23.85	4.52	72.94	18.43
72	N/A	Intensive Networks Ltd	(01628) 511 054	97.22%	30.45	18.54	3.16	63.31	36.81
73	58	Abel Internet	(0131) 445 5555	87.01%	24.57	25.17	4.97	53.76	14.39
74	76	Netkonect	(0171) 345 7777	100.00%	32.00	19.69	5.16	88.04	15.10
75	78	1st Solution	(01344) 752 444	97.33%	31.19	28.94	5.93	68.82	21.07
76	89	Internet for Business	(01224) 333 300	100.00%	32.38	22.73	4.13	87.93	14.73
77	81	AngliaNet	(01473) 211 922	84.81%	27.64	28.73	3.44	62.44	15.97
78	64	Newbury Internet	(01635) 569 123	97.26%	32.83	20.30	3.21	70.31	37.47
79	80	Force 9	(0800) 073 7800	98.36%	33.70	23.92	8.83	89.49	12.58
80	79	Internet Discovery	(0181) 694 2240	100.00%	35.06	28.81	4.04	89.61	17.77
81	36	Andover On-Line	(01264) 334 822	100.00%	35.46	29.86	5.43	90.50	16.07
82	74	AIC-ENTANET	(0500) 368 263	93.75%	34.39	18.87	2.80	94.21	21.67
83	92	Legend Internet	(01274) 743 500	100.00%	37.37	25.82	3.96	99.25	20.45
84	97	Baynet Internet	(01222) 256 401	93.10%	34.84	20.42	3.07	101.65	14.23
85	60	Paradise Internet Network Services	(01256) 414 863	98.65%	37.27	37.34	10.22	80.68	20.83
86	67	Chester Internet	(01244) 341 418	94.44%	36.06	24.71	4.37	98.25	16.91
87	87	Surflink	(0181) 903 2777	75.00%	28.73	28.08	7.69	62.31	16.85
88	88	AAP Internet	(0181) 427 1166	96.43%	37.33	17.89	3.19	111.52	16.71
89	83	London Web Communications	(0800) 026 8306	100.00%	39.12	19.68	7.01	113.13	16.68
90	69	WebLeicester	(0116) 223 0070	98.70%	39.89	25.20	4.62	114.34	15.39
91	84	NetMatters	(0345) 573 377	98.63%	40.92	31.97	5.80	103.31	22.61
92	70	Cable & Wireless Internet	(0500) 200 980	95.95%	45.83	17.92	2.81	147.12	15.46
93	73	ClaraNet	(0171) 903 3000	94.81%	48.29	19.99	6.99	154.18	11.99
94	45	Virgin Net	(0500) 558 800	100.00%	52.96	18.29	3.10	178.12	12.35
95	28	NTL Internet / ENABLIS	(0800) 607 608	100.00%	53.25	18.50	2.50	182.60	9.40
96	100	Zoo Internet	(0345) 326 326	97.30%	53.33	23.20	8.77	165.03	16.32
97	39	Which? Online	(0645) 830 240	94.67%	53.06	17.53	2.66	179.83	12.23
98	85	INTERact	(01753) 776 699	80.00%	55.10	28.50	10.42	166.17	15.33
99	98	Avel Internet	(01237) 425100	82.76%	34.30	17.69	2.95	76.06	40.53
100	44	UK Online	(01749) 333 333	84.75%	35.80	31.44	3.24	93.08	15.44
101	101	FirstNet Services	(0113) 294 4224	88.31%	56.70	37.08	5.88	165.87	17.96

How the performance tests work

The *Internet Magazine* provider Lab tests are designed to provide you with information on the speed and availability of Internet Service Providers. Every month, our testing system accesses each of the ISPs on the list many times. Our system repeatedly checks:

- The availability of the ISPs. How easy is it to make the connection? How often are all their modems engaged?
- The speed of the connection. How long do a number of popular Web pages take to download?

The Web pages we use for the performance tests change every month. This month we've tested four sites. First up is a site hosted in the US (**www.cicada.com**). We then hit a UK site that's not directly connected to any of the ISPs tested(**www.bournemouth.ac.uk/Dearingstat.html**). We also hit a site in Europe (**http://europa.eu.int/euro**) and one in Ireland (**www.iia.ie/contact/contact.html**). These pages give a good idea of the general speed of Web access through the ISP's network and their international bandwidth. We run these tests repeatedly, 24 hours a day. The results are then processed down to give the average figures shown above.

To rank the ISPs, we calculate the geometric mean of the availability and average Web performance. This figure is used to rank the ISPs in order of overall performance. These two results are given equal weighting, so a provider with a below average availability but an above average Web speed could come higher in the rankings than one with 100 per cent availability but slower access speeds. The tests for this month ran between 1 April and 20 April 1998.

How the ISPs performed over the last six months

Find out how reliable your ISP is with the help of our unique chart...

	Provider	Phone	URL
1	Technocom	(01753) 714 200	www.technocom.net
2	SAQ Network Services	(0800) 801 514	www.saqnet.co.uk
3	Primex	(01908) 643 597	www.primex.co.uk
4	UUNet (Pipex Dial)	(0500) 474 739	www.uk.uu.net
5	Nildram	(0800) 072 0460	www.nildram.net
6	I-Way	(0171) 734 5734	www.i-way.co.uk
7	Sonnet Internet	(0171) 891 2000	www.sonnet.co.uk
8	ProWeb	(0500) 636 343	www.proweb.co.uk
9	REDNET	(01494) 511 640	www.red.net
10	Oxford CommUnity Internet	(01865) 856 000	www.community.co.uk
11	CIX	(0845) 355 5050	www.cix.net.uk
12	The Internet Business	(01232) 424 190	www.tibus.net
13	Wyenet Internet services	(01989) 762 476	www.wyenet.co.uk
14	Pipemedia OnLine	(01455) 828 218	www.pipemedia.co.uk
15	Netcom Internet	(01344) 395 600	www.netcom.net.uk
16	Cable Internet	(0500) 541 542	www.cableinet.co.uk
17	Maidenet	(01628) 825 757	www.maidenet.co.uk
18	NetDirect Internet	(0181) 305 5000	www.ndirect.co.uk
19	WSS Internet Access	(01793) 420 764	www.WSkiSoft.co.uk
20	BT Internet	(0800) 800 001	www.btinternet.com
21	Global Internet	(0870) 909 8041	www.global.net.uk
22	Intonet	(0181) 941 9195	www.intonet.co.uk
23	Demon Internet	(0181) 371 1234	www.demon.net
24	Onyx Internet	(0345) 715 715	www.onyxnet.co.uk
25	Internet Central	(01270) 611 000	www.netcentral.co.uk
26	Datanet	(01252) 810 081	www.data.net.uk
27	Netkonect	(0171) 345 7777	www.netkonect.nco.uk
28	Power Internet	(01908) 605 188	www.powernet.co.uk
29	Vossnet	(01753) 737 800	www.vossnet.co.uk
30	CompuServe	(0990) 000 200	www.compuserve.com
31	Pavilion Internet	(01273) 607 072	www.pavilion.co.uk
32	Direct Net @ccess	(01232) 201 555	www.d-n-a.net
33	Eclipse Networking	(01392) 202 345	www.eclipse.co.uk
34	LineOne	(0345) 777 464	www.LineOne.net
35	Enterprise	(01624) 677 666	www.enterprise.net
36	WorldWide Web Services Ltd	(01784) 898 800	www.webs.co.uk
37	Frontier Internet Services	(0171) 536 9090	www.ftech.co.uk
38	Force 9	(0800) 073 7800	www.force9.net
39	U-Net	(01925) 484 444	www.u-net.net
40	TriNET	(01539) 731 000	www.trinetimb.com
41	Newbury Internet	(01635) 569 123	www.newbury.net
42	Easynet	(0541) 594 321	www.easynet.co.uk
43	Cerbernet	(0171) 360 8000	www.cerbernet.co.uk
44	Thames Global Internet Services	(01344) 641 627	www.tgis.co.uk
45	NTL Internet / ENABLIS	(0800) 607 608	www.ntli.com
46	MetroNet	(0181) 426 4446	www.metronet.co.uk
47	HiWay	(01635) 573 300	www.hiway.co.uk
48	SoftProg NET	(0181) 788 0656	www.softprog.net
49	Andover On-Line	(01264) 334 822	www.andover.co.uk
50	Mistral Internet	(01273) 747 432	www.mistral.co.uk
51	Pinnacle Internet	(01293) 613 686	www.pncl.co.uk
52	Inter@lpha	(01703) 363 200	www.interalpha.net
53	Prestel Online	(0990) 223 300	www.prestel.co.uk
54	Telinco Internet Services	(0800) 542 4343	www.telinco.net
55	Paradise Internet Network Services	(01256) 414 863	www.pins.co.uk
56	Legend Internet	(01274) 743 500	www.legend.co.uk
57	Northants Computer Centre	(01604) 22539	www.nccnet.co.uk
58	Which? Online	(0645) 830 240	www.which.net
59	PowerNet	(0500) 011 501	www.powernet-int.co.uk
60	Poptel	(0171) 923 9465	www.poptel.org.uk
61	Chester Internet	(01244) 341 418	www.chesternet.co.uk
62	Virgin Net	(0500) 558 800	www.virgin.net
63	London Web Communications	(0800) 026 8306	www.londonweb.net
64	Aviators Network	(01727) 868 468	www.avnet.co.uk
65	Abel Internet	(0131) 445 5555	www.abel.net.uk
66	Internet for Business	(01224) 333 300	www.wintermute.co.uk
67	Web Plus	(0345) 932 758	www.webplus.co.uk
68	Baynet Internet	(01222) 256 401	www.baynet.co.uk
69	Cyber ware	(01733) 765 005	www.cyberware.co.uk
70	AAP Internet	(0181) 427 1166	www.aapi.co.uk
71	Surflink	(0181) 903 2777	www.surflink.co.uk
72	CYBERphile Internet	(01543) 454 840	www.cyberphile.co.uk
73	Internet Discovery	(0181) 694 2240	www.idiscover.co.uk
74	ClaraNet	(0171) 903 3000	www.clara.net
75	Zoo Internet	(0345) 326 326	www.zoo.co.uk
76	INTERact	(01753) 776 699	www.uv.net
77	AngliaNet	(01473) 211 922	www.anglianet.co.uk
78	Avel Internet	(01237) 425100	www.avel.co.uk
79	Internet UK	(01827) 711 722	www.zipmail.co.uk

Top performers over the last six months

As well as our normal tests, every month we produce a table showing how the ISPs have performed over the past six months. We're all after consistency in our service provider's performance, so it's important to check out these figures before you choose an ISP.

We take availability data and Web access speed for the past six months and produce an overall average for both sets of figures. These averages are then used to calculate an overall rating.

The table only includes service providers which have been in our tests for the last six months. Many have only recently joined our tests, so they're not included. Likewise, the table doesn't feature any provider who doesn't have the full six months' worth of data.

The results

This month, 79 providers qualify for entry into our six-month table. With its excellent second place in our monthly tests, Technocom moves upinto first place in the table, ahead of SAQ which hangs onto its high placing in the table thanks to another good set of performance figures this month.

Unfortunately we don't have a full six months' worth of data for our monthly winners, Freedom to Surf, so we're unable to list them in this table.

Mixed results for the big boys

Close runners-up are Primex and UUNet in third and fourth positions. UUNet is one of the few big name ISPs to make it into the top 10 of this table.

Despite recent problems with busy lines, BT Internet has performed reasonably over the last six months. This month it jumped up from 38th to 20th postion.

Demon Internet, meanwhile, moves up a couple of places to 23, while CompuServe drops from 24th position down to 30th. However, this result still puts the content provider ahead of rivals, including Which? Online and VirginNet.

ignore@yourperil.

in business today you have to communicate to accumulate . so we don't just give your company its own email address , we give everyone in it one too . and by making it all so easy , we've made ourselves the uk's number one internet service provider . so call us on 0800 458 9666 . or scribble your name and address anywhere on this ad , tear it out and send it to us at freepost demon (yes , that's all you have to write) . we'll send you a free 30-day trial cd and brochure in the ignore at your peril envelope .

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www.demon.net email : sales@demon.net

pick a prov

The most up to date information is vital when you're choosing from the hundreds of Internet service providers. You'll find no better guide than our Pick a Provider section over the following five pages

New ISPs on the block

Take a deep breath... Newgate Communications, the Midlands cellular phone service provider for 11 years is now an ISP, using the Easynet backbone.
www.newgate.co.uk.

Dial Internet is a business only ISP. Not (under any circumstances) to be confused with DIALnet, the tenner a month consumer ISP
www.dialin.co.uk

And so to UK2NET. This Surrey based dial-up provider charges from £9.69 a month. And then there's Intensive Networks and Python Internet, both tenner a month dial-up ISPs. Check out how the newcomers fare in our Labs test on page 140.
www.intensive.net
www.python.co.uk

UniNet is to launch with a pretty comprehensive start-up package. How does £9.99 a month, a copy of IE4, interactive training and a set of customised Web pages grab you?
www.uninet.co.uk

Say hello, wave goodbye

Farewell to Zynet, the Exeter based ISP no longer offering Net access.

NetDirect has finally bought the rights to its domain name. No more www.ndirect.co.uk. Thankfully it now has **www.netdirect.net.uk**

New small print

Wavenet is offering a flat fee access deal of £58.75 (inc VAT). Simply pledge yourself to the company for a minimum two-year contract.
www.wavenet.co.uk

Meanwhile, Direct Connection has got itself extra bandwidth to the US and dropped its set-up charges. Its also automated measurement of traffic to personal Web sites. Go over the daily limit of 30Mb, and your site will be automatically suspended.
www.dircon.net

Access all areas

VirginNet has added shopping, music and film channels. David Clarke, UK CEO, hinted that VirginNet would have more new content and services to announce later this year.
www.virgin.net

Under new management

Force9 has been taken over by Insight Enterprises. Insight acquires 85 per cent of Force9, contingent on profitability over the next three years.
www.force9.net.

Nildram has launched two new business packages. No set-up fees, £360 per year for a standard dial-up account, 5Mb of commercial Web space and a fully qualified domain name. An ISDN account will set you back £870. Couldn't be simpler.
www.nildram.co.uk

We have the technology

ISPs are beginning to adopt the new V.90 56K ITU modem standard. ENTANET claims it was the first, but others are hot on its heels.
www.enta.net/www.netcom.net.uk

BT has slashed the price of ISDN. Entry level now costs £100. And Technocom has announced a major upgrade of its dial-up lines.
www.technocom.net
www.isdn.bt.com

If you've subscribed to an ISP not mentioned here or are an ISP with important news, please tell us.
providers@internet.emap.com

How to choose an ISP

It's crucial to choose a service provider that gives you local call access to the Net. Most ISPs let you connect from anywhere on the mainland UK for the price of a local phone call. They use systems run by companies such as BT, Energis and Mercury, where the phone number starts 0345, 0645 or 0845.

The next step is to look at how the providers charge for their services. Most ISPs charge a flat fee for unlimited use of the Net. They assume the cost of the phone call will stop you staying online for too long. Some companies (such as AOL, MSN and CompuServe, which also provide their own content) charge for the time you're online. They have options that give you three hours or five hours online, for example. Once you exceed this figure you're charged at an hourly rate. This might be a cheaper option if you only use the Net occasionally, but it's easy to spend longer online than you think, so make sure the charges don't rack up. It's also possible to get a cut-price email-only account from companies such as FreeDotNet.

Out into the big wide Internet

Another crucial consideration is your ISP's connection to the rest of the Internet. If its connections are small and clogged, you can expect slow Web access, email that takes a long time to be delivered and many other problems. We run regular tests of service providers to find the fastest. See page 140 for more details.

Supporting the customer

Technical support is a vital part of the service. We've added the hours support is available to our listings. Make sure you can get support during the times you're actually going to be using the service. And don't be afraid to ask for the technical support number before you sign up and give it a ring, armed with a tricky question you've prepared earlier.

You should also check that your service provider is a member of the ISPA (Internet Service Providers Association). The ISPA was set up to establish a code of practice for service providers. Among other factors, the code encourages self-regulation for ISPs. What's more if you have a complaint about your service provider you can always take it to the ISPA. **www.ispa.org.uk**

- Once you've signed up, you can test your email account by sending an email to **newuser@internet.emap.com**

Forget the virtual world, let real people in real offices guide you through cyberspace.
Whether you're already connected to the Net or wondering how to make it work for you, call the

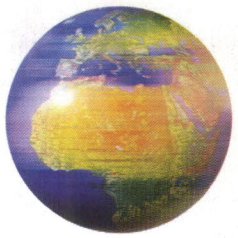
i-way helpline 0118 958 0058

For online help, email info@i-way.net.uk or visit www.i-way.co.uk

Soho 0171 734 5734 West London 0181 758 0058 Oxford 01865 200783 Swindon 01666 860100

i-way

vider



The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Online Service Providers (you have to pay for content)						
AOL	(0800) 279 1234	queryuk@aol.com	www.uk.aol.com	7.45-10.30 Mon-Fri/9.00-17.30 Sat	from £4.95	AOL
CompuServe	(0990) 000 200	70006.101@compuserve.com	www.compuserve.com	8.00-midnight every day	from £6.50	CompuServe
LineOne	(0345) 777 464	enquiries@LineOne.net	www.LineOne.net	8.00-22.00 Mon-Sat/10.00-22.00 Sun	from £9.95	BTnet
MSN	(0345) 002 000	ukweb@microsoft-contact.co.uk	www.uk.msn.com	24 hours a day	from £4.95	UUNET
Which? On-line	(0645) 830 240	support@which.net	www.which.net	24 hours a day	from £11.75)	NTL Internet
Business providers (those that provide leased line and ISDN access only)						
1st Solution Internet	(01344) 752 444	sales@1st-solution.net	www.1st-solution.net	9.00-18.30 Mon-Fri	ISDN/LLO	GX Networks
ACE	(01670) 528 204	info@ace.co.uk	www.ace.co.uk	9.00-17.00 Mon-Fri	ISDN/LLO	Planet
Apple Centre Warrington	(01925) 444 499	sales@applecentre.com	www.applecentre.com	9.00-17.30 Mon-Fri	ISDN/LLO	Wisper
BusinessNet	(0171) 390 9933	sales@business.net.uk	www.business.net.uk	24 hours a day	ISDN/LLO	BusinessNet
Cerbernet	(0171) 360 8000	sales@cerbernet.co.uk	www.cerbernet.co.uk	9.00-18.00 Mon-Fri/pager Sat-Sun	ISDN/LLO	Wisper
COLT	(0171) 390 9099	info@colt.net	www.colt.net	24 hours a day	LLO	COLT Internet
Data Link Internet	(01522) 681 100	sales@data-link.net	www.data-link.net	9.00-17.00 Mon-Fri	ISDN/LLO	BTnet
Dial Internet	(01372) 456 000	sales@dialin.co.uk	www.dialin.co.uk	8.30-18.30 Mon-Fri	ISDN/LLO	BTnet
ElectricMail	(01223) 501 333	info@elmail.co.uk	www.elmail.co.uk	9.00-17.00 Mon-Fri	ISDN/LLO	GX Networks
Epinet	(01242) 821 000	info@epinet.co.uk	www.epinet.co.uk	9.00-17.00 Mon-Fri	ISDN/LLO	GX Networks/Energis
Genesis Project	(01232) 572 000	sales@gpl.net	www.gpl.net	9.00-20.00 every day	ISDN/LLO	NTL Internet
GX Networks	(0181) 957 1250	sales@gxn.net	www.gxn.net	9.00-18.00 Mon-Fri	LLO	GX Networks
I-Way Soho	(0171) 734 5734	sales@soho.i-way.net.uk	www.i-way.co.uk	8.00-18.30 Mon-Fri	ISDN/LLO	VBCnet/UUNET/PSInet
Impact Web Publishing	(01628) 522 099	nikki@impactwp.com	www.impactwp.com	9.00-18.00 Mon-Fri	LLO	GX Networks
Internet Central	(01270) 611 000	sales@netcentral.co.uk	www.netcentral.co.uk	9.00-18.00 Mon-Sat	ISDN/LLO	Cable Internet/ISPC
Internet for Business	(01224) 333 300	info@wintermute.co.uk	www.wintermute.co.uk	9.00-18.00 Mon-Fri	ISDN/LLO	Wisper
Internet Network Services	(0800) 467 638	info@insnet.net	www.insnet.net	24 hours a day	ISDN/LLO	Internet Network Services
Internet Solutions for Business	(0800) 731 8460	sales@is4b.net	www.business-solutions.net	24 hours a day	ISDN/LLO	BTnet/PSInet
iQ Internet	(01273) 327 088	sales@iql.co.uk	www.iql.co.uk	9.00-17.30 Mon-Fri	ISDN/LLO	Planet
ISPC	(01628) 639 595	barryr@ispc.net	www.ispc.net	9.00-17.00 Mon-Fri	ISDN/LLO	Cable Internet/ISPC
Mainstream Technology	(0345) 626 177	sales@mainstream.u-net.com	none	9.00-21.00 Mon-Fri/9.00-17.00 Sat	ISDN	U-Net
Mannet	(01624) 623 841	postmaster@mcb.net	www.mcb.net	9.00-17.30 Mon-Fri	ISDN/LLO	BTnet
Mitoo	(0171) 209 1515	sales@mitoo.co.uk	www.mitoo.co.uk/	9.00-17.30 Mon-Fri	ISDN/LLO	BTnet
NACAMAR	(01438) 715 100	info@nacamar.net uk	www.nacamar.co.uk	24 hours a day	LLO	NACAMAR
NetForce Group	(01245) 257 788	sales@netforce.net	www.netforce.net	9.00-17.00 Mon-Fri	ISDN/LLO	Wisper/BTnet
Nettec	(0171) 460 0500	info@nettec.co.uk	www.nettec.co.uk	9.00-17.00 Mon-Fri	ISDN/LLO	GX Networks
NORWEB.net	(0800) 195 0196	sales@norwebcomms.com	www.norwebcomms.com	24 hours a day	ISDN/LLO	The Web Factory
NTL Internet/ENABLIS	(0800) 607 608	sales@ntli.com	www.ntli.com	24 hours a day	ISDN/LLO	NTL Internet
Planet Online	(0113) 234 5566	info@theplanet.uk	www.theplanet.net	24 hours a day	ISDN/LLO	Planet Online
PlusNet Technologies	(0800) 073 7370	sales@plus.net.uk	www.plus.net.uk	24 hours a day	ISDN/LLO	PlusNet
Quza	(0800) 528 0000	info@quza.com	www.quza.com	24 hours a day	ISDN/LLO	Quza
REDNET	(01494) 511 640	info@red.net	www.red.net	9.00-17.30 Mon-Fri	ISDN/LLO	INS
Relay Business Systems	(0345) 369 999	enquiries@relay.co.uk	www.relay.co.uk	24 hours a day	ISDN/LLO	BTnet
Small Planet	(0171) 515 9889	admin@smallplanet.co.uk	www.smallplanet.co.uk	10.00-18.00 Mon-Fri	ISDN/LLO	BTnet
Smartways Internet	(01604) 670 500	info@smartways.com	www.smartways.com	9.00-18.00 Mon-Fri	ISDN/LLO	Wisper
Star Internet	(01285) 647 022	info@star.co.uk	www.star.co.uk	8.30-19.00 Mon-Fri	ISDN/LLO	Global One/Wisper
Technocom	(01753) 714 200	isales@technocom.net	www.technocom.net	9.00-17.30 Mon-Fri	ISDN/LLO	Technocom
The Education Exchange (EDEX)	(0181) 296 9201	info@edex.net.uk	www.edex.net.uk	8.00-19.00 Mon-Fri	ISDN/LLO	INS
UK Internet Provider	(01772) 908 000	internet@provider.co.uk	www.provider.co.uk	9.00-17.00 Mon-Fri	ISDN/LLO	Cable Internet/ISPC
VAS-NET	(01732) 865 555	sales@vas-net.net	www.vas-net.net	8.00-20.00 every day	ISDN/LLO	VAS-NET
VBCnet	(0117) 929 1316	sales@vbc.net	www.vbc.net	24 hours a day	ISDN/LLO	VBCnet
Web Plus	(0345) 932 758	sales@webplus.co.uk	www.webplus.co.uk	9.00-21.00 Mon-Fri/9.00-20.00 Sat-Sun	ISDN/LLO	Web Ltd/BTnet
Wisper	(0171) 432 0324	sales@wisper.net	www.wisper.net	9.00-17.00 Mon-Fri	LLO	Wisper
WydeWorld	(01232) 238 250	info@wydeworld.com	www.wydeworld.com	8.30-21.00 Mon-Fri	ISDN/LLO	NTL Internet
Full UK coverage						
AAP Internet	(0181) 427 1166	sales@aapi.co.uk	www.aapi.co.uk	10.00-20.00 Mon-Fri/14.00-18.00 Sat-Sun	£12.91*	Netkonect
Abel Internet	(0131) 445 5555	info@abel.co.uk	www.abel.net.uk	9.00-23.00 every day	£8.81*	Quza/Racal
ACGNET	(0171) 377 9114	sales@acgnet.co.uk	www.acgnet.co.uk	9.00-18.00 Mon-Fri	£11.81*	Nildram
AIC	(01279) 865 290	aic@aic.co.uk	www.aic.co.uk/entanet	9.00-17.00 Mon-Sat	£8.81*	VBCnet
Airtime Internet Resources	(01254) 676 921	sales@airtime.co.uk	www.airtime.co.uk	9.00-17.00 Mon-Fri	£15.27*	UUNET
Albatross	(01603) 442 233	enquiries@albatross.co.uk	www.albatross.co.uk	9.00-19.30 Mon-Fri	£11.74*	BTnet
Argo Interactive	(0500) 585 586	info@argonet.co.uk	www.argonet.co.uk	10.00-17.00 Mon-Sat	£11.75*	UUNET
Astra Internet	(0800) 018 2001	sales@astra.co.uk	www.astra.co.uk	9.00-17.00 Mon-Fri/ 9.00-12.00 Sat	£12.93*	GX Networks
Atlas	(0171) 312 0400	info@atlas.co.uk	www.atlas.co.uk	24 hours a day	£14.10*	UUNET
Aviators Network	(01727) 868 468	info@avnet.co.uk	www.avnet.co.uk	24 hour callback	£11.75*	PSInet
Baynet	(01222) 256 401	enq@baynet.co.uk	www.baynet.co.uk	8.00-18.00 Mon-Fri/9.00-17.30 Sat	£12	Netkonect
Beacon Internet Services	(01749) 831 056	sales@thebeacon.co.uk	www.n-e-t.co.uk/beacon/	8.00-18.00 Mon-Fri	£11.75*	NetOnline
Boots Internet	(01462) 743 112	support@boots.com	www.boots.com	9.00-22.00 Mon-Fri	£12.75	VBCnet
BT Internet	(0800) 800 001	support@btinternet.com.	www.btinternet.com	24 hours a day	£11.75*	BTnet
Cable and Wireless Internet	(0500) 200 980	support@mcmail.com	www.cwcom.co.uk	24 hours a day	£10*	Cable and Wireless
Cable Internet	(0500) 541 542	sales@cableinet.co.uk	www.cableinet.co.uk	9.00-21.00 every day	£11.75*	Cable Internet
Cable Online	(0800) 506 506	info@cableol.co.uk	www.cableol.net	24 hours a day	£11.75*	NTL Internet

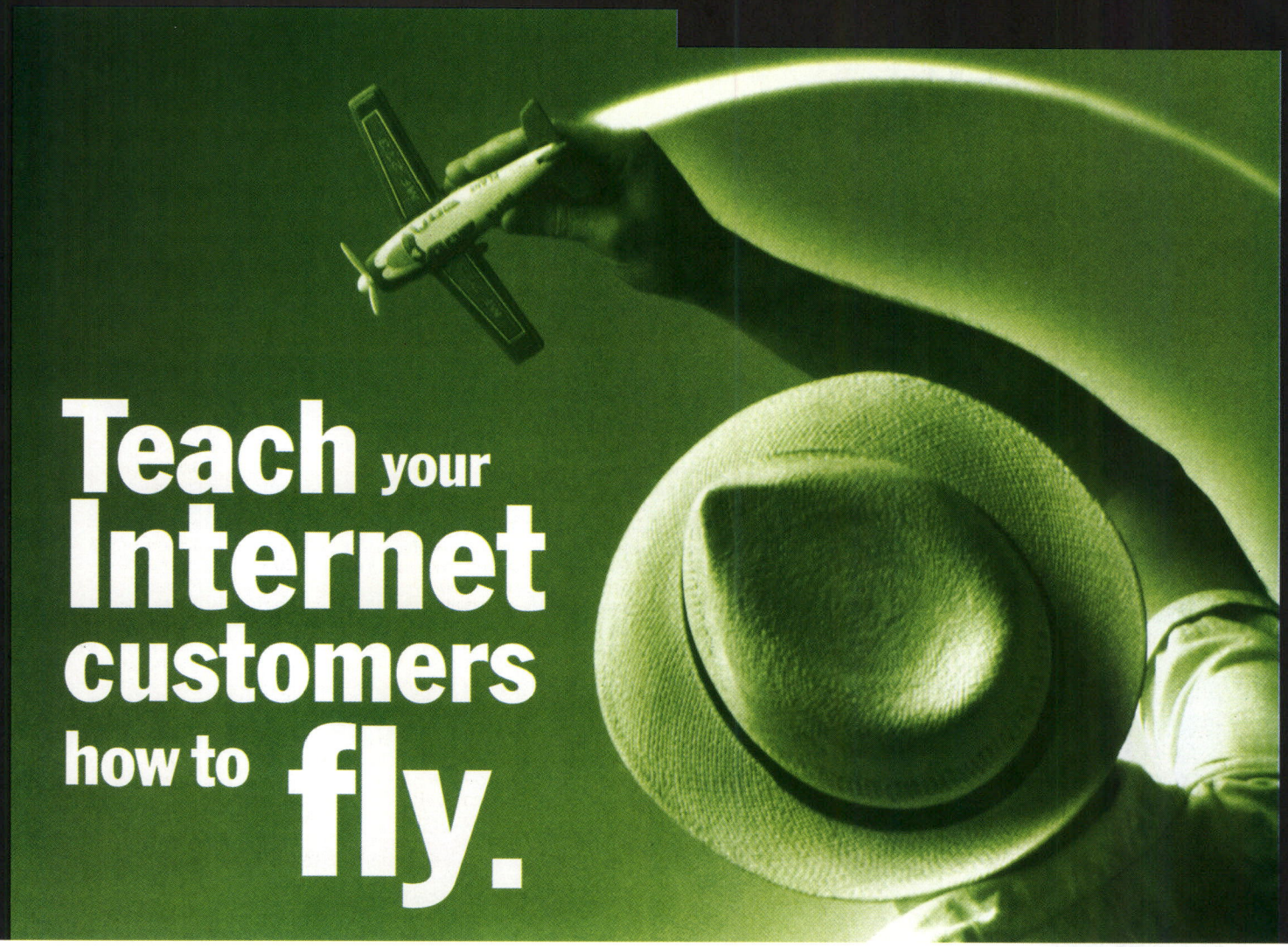
If you work for a provider that's not listed here, send the details to: providers@internet.emap.com

Key: LLO – leased line only ISDN/LLO – ISDN & leased line only * – price inc VAT

pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
CableNet	(01424) 830 700	info@cablenet.net.	www.cablenet.net/cablenet	24 hours a day	£11.69*	VBCnet
Castle.Net	(0181) 477 5623	sales@castle.net.uk	www.castle.net.uk	6.00-21.00 Mon-Fri	£8.81*	Technocom
CIX	(0845) 355 5050	sales@cix.net.uk	www.cix.net.uk	9.00-midnight Mon-Fri/10.00-18.00 Sat	£17.61*	BTnet
ClaraNET	(0171) 903 3000	sales@clara.net	www.clara.net	24 hours a day	£11.63*	Netkonect
Cocoon Internet Services	(0171) 373 8461	admin@cocoon.co.uk	www.cocoon.co.uk	8.00-20.00 Mon-Fri/10.00-19.00 Sat-Sun	£17.62*	UUNET
Colloquium	(0500) 008 543	sales@colloquium.co.uk	www.colloquium.co.uk	24 hours a day	£14.10*	UUNET
CommUnity Internet	(01865) 856 000	sales@community.co.uk	www.community.net.uk	9.00-18.00 Mon-Fri	£152.75* pa	VBCnet
CPD Online	(0181) 446 7890	sales@cpd.co.uk	www.cyberspace.cpd.co.uk	9.00-18.00 Mon-Fri	£11.75*	Nildram
CYBERphile Internet	(01543) 454 840	info@cyberphile.co.uk	www.cyberphile.co.uk	8.30-18.30 Mon-Fri	£11.75*	Xara
Cyberscape	(01253) 724 000	glenn@cyberscape.net	www.cyberscape.net	10.00-18.00 Mon-Fri	£12	Cable Internet/ISPC
Datanet	(01252) 810 081	info@data.net.uk	www.data.net.uk	24 hours a day	£17.62*	Planet Online
Demon	(0181) 371 1234	sales@demon.net	www.demon.net	24 hours a day	£11.75*	Demon
DIALnet	(0800) 881 881	sales@dialnet.com	www.dialnet.com	24 hours a day	£11.75*	Cable Internet
Direct Connection	(0800) 072 0000	sales@dircon.net	www.dircon.net	9.00-21.00 Mon-Fri/10.00-17.00 Sat-Sun	£13.50*	Direct Connection
Direct Net @ccess	(01232) 201 555	info@d-n-a.net	www.d-n-a.net	9.00-18.00 Mon-Fri/9.30-17.30 Sat	£7.50	GX Networks/Cable Internet
Easynet	(0541) 594 321	sales@easynet.net	www.easynet.co.uk	24 hours a day	£11.99*	Easynet/BTnet
EDI	(01539) 731 000	info@edi.co.uk	www.edi.co.uk	9.00-17.30 Mon-Sat	£15	Planet Online
ENTANET	(0500) 368 263	info@enta.net	www.enta.net	9.00-21.00 every day	£10.58*	Cable and Wireless
Enterprise	(01624) 677 666	sales@enterprise.net	www.enterprise.net	9.00-22.00 Mon-Fri/10.00-16.00 Sat-Sun	£9.40*	BTnet
EntNet	(0800) 525 470	sales@entertainers.net	www.entertainers.net/dialup.htm	9.00-21.00 Mon-Fri/9.00-14.00 Sat	£10*	Telinco
Farebase	(01322) 280 011	Info@farebase.co.uk	www.farebase.net	7.00-19.00 Mon-Fri/10.00-15.00 Sat-Sun	£16.45*	Easynet
Force 9	(0800) 073 7800	sales@force9.net	www.force9.net	7.00-23.00 every day	£9.99*	Force 9
Freedom to Surf	(0181) 881 2111	sales@freedom2surf.net	www.freedom2surf.net	9.30-17.30 Mon-Fri	£11.75*	Freedom to Surf
FreeDotNet	(0181) 568 3377	info@thefree.net	www.thefree.net	9.00-17.00 Mon-Fri	from £1.25*	Worldcom
Frontier Internet Services	(0171) 536 9090	info@ftech.net	www.ftech.co.uk	9.00-19.00 Mon-Fri/noon-18.00 Sat	£11.75*	GX Networks/Wisper
Global Internet	(0870) 909 8041	info@global.net.uk	www.global.net.uk	9.00-21.00 Mon-Fri/ 10.00-18.00 Sat-Sun	£11.75*	BTnet/GX Networks
Globewide Internet Services	(0161) 953 4018	info@globewide.com	www.globewide.com	10.00-22.00 Mon-Fri	£10*	BTnet/Wisper
GreenNet	(0171) 713 1941	support@gn.apc.org	www.gn.apc.org	10.00-18.00 Mon-Fri	£15.86*	UUNET
Hi-Net	(0181) 532 6532	internet@higrade.com	www.hi-net.co.uk	24 hours a day	£11.75*	Planet Online
Hiway	(01635) 573 300	info@hiway.co.uk	www.hiway.co.uk	8.30-18.00 Mon-Fri	£14.69*	GX Networks/Wisper
IBM Global Services	(0990) 426 426	globalnetwork@uk.ibm.com	www.ibm.net/	9.00-17.00 Mon-Fri	£17.62*	IBM Global Network
Infotrade	(0800) 226 600	enquiries@infotrade.co.uk	www.infotrade.co.uk	10.00-20.00 Mon-Fri/10.00-14.00 Sat	£69.88* pa	BTnet
Intensive Networks	(01672) 511 054	sales@intensive.net	www.intensive.net	9.00-19.00 Mon-Fri	£11.75*	Wisper
Internet Discovery	(0181) 694 2240	sales@idiscover.co.uk	www.idiscover.co.uk	9.00-21.00 Mon-Sat	£15*	UUNET/VBCnet
Internet UK	(01827) 711 722	sales@zipmail.co.uk	www.zipmail.co.uk	9.00-17.30 Mon-Sat	£11.75*	Wisper
Intonet	(0181) 941 9195	info@intonet.co.uk	www.intonet.co.uk	8.00-20.00 Mon-Sat	£11.75*	BTnet
K Web	(0500) 751 111	info@helpdesk.k-web.co.uk	www.k-web.co.uk	24 hours a day	£11.69*	Planet Online
Karoo	(01482) 602 742	info@karoo.net	www.karoo.net	24 hours a day	£9.79*	Planet Online
London Web Communications	(0800) 026 8306	internet@londonweb.net	www.londonweb.net	9.00-21.00 Mon-Sat/pager Sun	£14.68*	Netkonect
MacLine	(0181) 401 1111	orders@macline.co.uk	www.macline.co.uk	9.00-18.00 Mon-Fri	£14.10*	Atlas
Madhouse Net	(0800) 074 8283	info@madhouse.uk.com	www.madhouse.uk.com	8.00-20.00 Mon-Fri	£11.75*	NACAMAR
Mercia Internet	(01827) 69166	sales@mercia.net	www.mercia.net	9.00-17.30 Mon-Fri	£11.50*	Netkonect
Mistral Internet	(01273) 747 432	info@mistral.co.uk	www.mistral.co.uk	9.30-18.00 Mon-Fri/10.00-16.00 Sat	£14.04*	BTnet
Moonlight	(01276) 856 868	sales@moon-light.co.uk	www.moon-light.co.uk	9.00-18.00 Mon-Fri	£14.95*	Cable Internet
Net Online	(0171) 447 7447	sales@nol.co.uk	www.nol.co.uk	9.00-20.00 every day	£11.75*	Global One/Quza
Netcom Internet	(0800) 980 9107	info@netcomuk.co.uk	www.netcom.net.uk	24 hours a day	£14.95*	Netcom
NetDirect Internet	(0800) 731 3311	info@netdirect.net.uk	www.netdirect.net.uk	9.00-21.00 Mon-Fri/9.00-17.00 Sat-Sun	from £8.99*	BTnet/BusinessNet
Netkonect	(0171) 345 7777	info@netkonect.net	www.netkonect.nco.uk	9.00-18.00 Mon-Fri/9.00-13.00 Sat	£11.75*	Netkonect
NetMatters	(0345) 573 377	info@netmatters.co.uk	www.netmatters.co.uk	8.00-20.00 Mon-Fri	£11.75*	Wisper/VBCnet
Newbury Internet	(01635) 569 123	sales.enq@newbury.net	www.newbury.net	24 hours a day	£11.75*	Aspen
NewNet	(07000) 639 638	sales@newnet.co.uk	www.newnet.co.uk/home	9.00-22.00 every day	£9.74*	Wisper/VBCnet
Nildram	(0800) 072 0460	sales@nildram.co.uk	www.nildram.net	9.00-23.00 every day	from £5	Nildram
On-Line Entertainment	(0181) 558 6114	sysop@on-line.co.uk	www.on-line.co.uk	9.30-17.30 Mon-Fri	£15* pq	ANS
Onyx	(0345) 715 715	sales@onyxnet.co.uk	www.onyxnet.co.uk	8.30-18.00 Mon-Fri	£11.75*	Onyx
Paston Chase	(01603) 502 061	sales@paston.co.uk	www.paston.co.uk	24 hours a day	£11.75*	UUNET
Pinnacle Internet	(01293) 613 686	info@pncl.co.uk	www.pncl.co.uk	9.00-19.00 Mon-Fri	£14.50	UUNET
Pipemedia OnLine	(01455) 828 218	sales@pipemedia.net	www.pipemedia.co.uk	24 hours a day	£11.75*	VBCnet
@pobox	(0990) 168 160	info@pobox.co.uk	www.pobox.co.uk	9.00-20.00 Mon-Fri	£15.00	INSnet
Poptel	(0171) 923 9465	info@poptel.net	www.poptel.org.uk	9.30-18.00 Mon-Fri	£11.75*	GX Networks
Power Internet	(01908) 605 188	info@powernet.co.uk	www.powernet.co.uk	24 hours a day	£14.10*	BTnet
Prestel Online	(0990) 223 300	enquiry@netsales.prestel.co.uk	www.prestel.co.uk	24 hours a day	£10.56*	Planet Online
Primex	(01908) 643 597	info@alpha.primex.co.uk	www.primex.co.uk	8.00-21.00 every day	£11.75*	On-Net/Netkonect
Pro-Net Internet Services	(0181) 200 3565	sales@pro-net.co.uk	www.pro-net.co.uk	9.00-18.00 Mon-Fri/9.00-16.00 Sat	£99 pa	Cable Internet/ISPC
ProWeb	(0500) 636 343	sales@proweb.co.uk	www.proweb.co.uk	10.00-19.00 Mon-Fri/9.00-13.00 Sat	£11	Cable Internet
PSI Net UK	(01223) 577 577	sales@uk.psi.com	www.uk.psi.com	9.00-21.00 Mon-Fri/9.00-18.00 Sat	£9.95	PSI Net
Python Internet	(0870) 606 0125	sales@python.co.uk	www.python.co.uk	9.30-19.00 Mon Fri	£11.75*	INS
Research Machines	(01235) 826 868	sales@rmplc.co.uk	www.rmplc.co.uk	9.00-21.00 Mon-Fri	£12.50	GX Networks/Wisper
Round One Communications	(01237) 425 100	info@rom.net	www.rom.net	9.00-18.00 Mon-Fri	£12	UUNET/GX Networks
RSC Internet	(01224) 585 113	info@rsc.co.uk	www.rsc.co.uk	9.00-18.00 Mon-Sat	£9.99*	BTnet
SAQ Network Services	(0800) 801 514	sales@saqnet.co.uk	www.saqnet.co.uk	24 hours a day	£12.50*	BTnet/C&W/INS
Scotland Online	(0845) 270 0027	admin@sol.co.uk	www.scotland.net	24 hours a day	£11.75*	Sprint
Sonnet Internet	(0171) 891 2000	enquire@sonnet.co.uk	www.sonnet.co.uk	9.00-21.00 Mon-Fri/9.00-18.00 Sat	£14.68*	BusinessNet
SOS Internet	(01271) 321 145	sosi@sosi.net	www.sosi.net	9.00-17.30 Mon-Sat	£11.75*	Aspen
SurfAid	(0870) 907 1000	info@surfaid.org	www.surfaid.org	9.00-21.00 Mon-Fri/10.00-18.00 Sat-Sun	from £7.50	GX Networks



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pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
Surflink	(0181) 903 2777	info@surflink.co.uk	www.surflink.co.uk	24 hours	£7.99	BTnet
Telinco Internet Services	(0800) 542 4343	sales@telinco.net	www.telinco.net	9.00-21.00 Mon-Sat	£5*	Cable Internet/ISPC
The Internet Experience	(01480) 386 836	experience@intecc.co.uk	www.intecc.co.uk	9.00-19.30 Mon-Sat	£11.75*	Cerbernet/Wisper
The Network Group	(01293) 616 000	info@network-group.com	www.network-group.com	8.30-18.00 Mon-Fri	£15	UUNET
Time Internet	(01483) 860 606	office@time-technology.co.uk	www.time-technology.co.uk	8.30-18.00 Mon-Fri	£12.50	Aladdin
Timewarp Internet	(0161) 950 8855	sales@timewarp.co.uk	www.timewarp.co.uk	9.00-20.30 Mon-Fri	£8.25*	ISPC
TriNET	(01539) 731 000	dmacdonald@trinetimb.com	www.trinetimb.com	9.00-17.30 Mon-Fri	£11.75*	Planet Online
U-Net	(01925) 484 444	sales@u-net.net	www.u-net.net	8.00-10.00 Mon-Fri/10.00-16.00 Sat	£14.10*	U-Net
UK Online	(01749) 333 333	sales@ukonline.co.uk	www.ukonline.co.uk	24 hours a day	£9.99*	Easynet
UUNET (Pipex Dial)	(0500) 567 000	sales@uk.uu.net	www.uk.uu.net	9.00-20.00 Mon-Fri/10.00-18.00 Sat24hour, 7 days a week (for business connections)	£12.75	UUNET
Virgin Net	(0500) 558 800	advice@virgin.net	www.virgin.net	24 hours a day	£11.99*	NTL Internet
Wave Rider Internet	(0121) 603 3888	info@waverider.net.uk	www.waverider.co.uk	24 hours a day	£12*	VBCnet
Wavenet	(01253) 794 386	sales@wavenet.co.uk	www.wavenet.co.uk	10.00-18.00 Mon-Fri	£72py	BTnet
Webpro	(0181) 886 2424	info@webpro.net.uk	www.webpro.net.uk	24 hours a day	£12.50	Planet Online
Webscape	(01963) 370 800	webmaster@webscape.co.uk	www.webscape.org	24 hours a day	£15	GX Networks
WinNET Communications	(0181) 930 6688	sales@win-uk.net	www.win-uk.net/	9.30-18.00 Mon-Fri	£17.63*	UUNET
Wirenet Amiga	(01925) 496 482	sales@wirenet.co.uk	www.wirenet.co.uk	9.00-19.00 Mon-Fri/9.00-13.00 Sat email at other times	£14.25*	U-Net
WiSS	(01248) 602 405	enquiries@wiss.co.uk	www.wiss.co.uk	9.00-22.00 every day	£11.75*	Celtic Internet
Worldwide Web Services	(01784) 898 800	info@webs.co.uk	www.webs.co.uk	9.00-18.00 Mon-Fri	£17.62*	U-Net
Zetnet Services	(01595) 696 667	info@zetnet.co.uk	www.zetnet.co.uk	24 hours a day	£7.50*	BTnet/ Wisper
Zoo Internet	(0345) 326 326	support@zoo.co.uk	www.zoo.co.uk	9.00-21.00 every day	£12.50*	Zoo Internet
Zulu Internet	(01494) 758 895	sales@zulu.co.u	www.zulu.co.uk	8.00-21.00 every day	from £5*	Nildram
East						
AngliaNet	(01473) 211 922	login@anglianet.co.uk	www.anglianet.co.uk/anglianet	8.00-21.00 Mon-Sat/11.00-19.00 Sun	£11.75*	Wisper
Cyber Ware	(01733) 765 005	webmaster@cyberware.co.uk	www.cyberware.co.uk	9.00-midnight Mon-Fri	£9.99*	BTnet
Foobar Internet	(0116) 233 0033	sales@foobar.co.uk	www.foobar.co.uk	9.00-17.00 Mon-Fri	£11.75*	Netkonect
Ke-Connect Internet Services	(01449) 770 488	info@keme.net	www.keme.co.uk	9.00-21.00 Mon-Fri/10.00-14.00 Sat-Sun	£11.75*	Wisper
Net Solutions Europe	(01255) 233 300	ScottC@nse.co.uk	www.nse.co.uk	9.00-17.00 Mon-Fri	£15	Technocom
RJT Internet Services	(01493) 857 048	postmaster@rjt.co.uk	www.rjt.co.uk	9.00-17.00 Mon-Sat	£7.99	BTnet
Ireland						
Creative Online Media	(01232) 370 124	john@globalgateway.com	www.globalgateway.com	8.30-17.30 Mon-Fri	£9.95	PSInet
Indigo	(00353) 1 604 6901	info@indigo.ie	www.indigo.ie	9.00-18.00 Mon-Fri	£11.75*	AT&T/BBN Planet
Ireland On-Line	(00353) 1 855 1739	sales@iol.ie	www.iol.ie	9.00-18.00 Mon-Fri	IR£10	UUNET
Telecom Internet	(00353) 1 269 22 22	sales@tinet.ie	www.tinet.ie	9.30-17.30 Mon-Fri	IR£12	Telecom Eireann
The Internet Business	(01232) 424 190	info@tibus.net	www.tibus.net	9.00-17.30 Mon-Fri	£8.81*	BTnet
Unite Solutions	(01232) 777 338	solutions@unite.co.uk	www.unite.co.uk	9.00-17.00 Mon-Fri	£12.50	BTnet
London and South East						
Adept	(01843) 850 444	sales@adept.co.uk	www.adept.co.uk	8.30-18.00 Mon-Fri	£11.75*	Netkonect
Alpha-Access	(01344) 750 505	office@alpha-access.co.uk	www.alpha-access.co.uk	9.00-17.30 Mon-Fri	£11.75*	Wisper
Amity Internet	(0500) 200 171	info@amity.co.uk	www.amity.co.uk	8.00-19.00 Mon-Fri	£11.63*	BTnet
Bogomip	(0181) 960 3050	info@mail.bogo.co.uk	www.bogo.co.uk	10.00-20.00 Mon-Fri/10.00-17.00 Sat-Sun	£12	BTnet
CentreNet	(0800) 243 336	info@centre.net.uk	www.centre.net.uk	24 hours a day	£8.33*	BTnet
ComeNet Technology	(0181) 357 9111	sales@come.net.uk	www.come.net.uk	8.30-20.00 Mon-Fri	£35*pq	UUNET/VBCnet
Cygnet Internet Services	(0181) 880 4650	info@cygnet.co.uk	www.cygnet.co.uk	9.00-19.00 Mon-Fri	£8	UUNET
Dolphin Internet	(0181) 932 5000	info@dolphinet.co.uk	www.dolphinet.co.uk	24 hour pager service	£14.10*	BTnet
Exconet	(01268) 453 000	sales@exconet.co.uk	www.exconet.co.uk	9.00-22.00 Mon-Fri	£11.75*	Nildram
ExNet Systems	(0181) 296 5577	info@exnet.com	www.exnet.com	10.00-midnight Mon-Fri	£14.10*	VBCnet
FastNet International	(01273) 677 633	info@fastnet.co.uk	www.fastnet.co.uk	9.30-17.00 Mon-Fri	£30 pq	VBCnet
FlexNet	(01638) 711 550	info@flexnet.net	www.flexnet.co.uk	9.00-18.00 Mon-Fri	£11.75*	Netcom
I-Way Brentford	(0181) 758 0058	sales@brentford.i-way.net.uk	www.i-way.co.uk	8.00-18.30 Mon-Fri	£11.75*	VBCnet/UUNET/PSInet
I-Way Oxford	(01865) 200 788	sales@oxford.i-way.net.uk	www.i-way.co.uk/oxford	8.00-18.30 Mon-Fri	£30 pq	VBCnet/UUNET/PSInet
I-Way Reading	(0118) 958 0058	sales@i-way.net.uk	www.i-way.net.uk	8.00-18.30 Mon-Fri	£11.75*	VBCnet/UUNET/PSInet
Inter-Computer Technology	(0171) 486 9601	sales@inctech.com	www.inctech.com	24 hours a day	£15	Wisper
INTERact Internet	(01753) 776 699	sales@interact.net.uk	www.interact.net.uk	24 hours a day	£9.40*	Cable Internet/ISPC
KBnet	(01234) 271 900	sales@kbnet.co.uk	www.kbnet.co.uk	9.00-18.00 Mon-Sat	£12.93*	Cabletel
KDD Euro Web	(0800) 010 510	sales@kew.net	www.kew.net	9.00-17.00 Mon-Fri	£17.62*	Internet KDD
KENTnet Internet Services	(01622) 688 748	sales@kentnet.co.uk	www.kentnet.co.uk	9.00-21.00 Mon-Fri/9.00-17.00 Sat-Sun	£10.50	BTnet
London Internet	(0171) 838 1199	s.ken1@dialin.net	www.london-internet.net	9.00-18.00 Mon-Sat	£11.75*	Aspen
Maidenet	(01628) 825 757	enquires@maidenet.co.uk	www.maidenet.co.uk	9.00-17.00 Mon-Fri	£15.00	BTnet
Mailbox Internet	(0171) 731 8558	info@mailbox.co.uk	www.mailbox.co.uk	9.30-18.00 Mon-Fri	£11.75*	BusinessNet/VBCnet
MetroNet	(0800) 074 1881	info@metronet.co.uk	www.metronet.co.uk	Mon to Sat 10.30am to 7pm/email othertimes	£10.79	Quza
Moose	(01923) 238 248	info@moose.co.uk	www.moose.co.uk	8.00-18.00 Mon-Fri	£11.75*	BTnet
Netmania	(0181) 252 1199	info@netmania.co.uk	www.netmania.co.uk	11.00-11.00 Mon-Fri	£42.50 pa	BTnet
Pavilion Internet	(01273) 607 072	info@pavilion.co.uk	www.pavilion.co.uk	24 hours a day	£12.55*	Easynet/BTnet
SoftProg NET	(0181) 788 0656	sales@softprog.co.uk	www.softprog.net	9.00-19.00 Mon-Fri	£14.10*	BTnet
Thames Global Internet Services	(01344) 641 627	info@tgis.co.uk	www.tgis.co.uk	9.00-21.00 every day	£9.99*	Cable Internet/ISPC
The Web Factory (London)	(0171) 637 0310	sales@weblondon.co.uk	www.weblondon.co.uk	9.00-17.00 Mon-Fri	from £12.50	The Web Factory
UK2NET	(0171) 394 0388	sales@uk2net.com	www.uk2net.com	9.00-18.00 Mon-Fri	from £9.69*	GX Networks
Vodanet	(01708) 863 043	ops.manager@dialin.net	www.vodanet.net	9.00-17.00 Mon-Fri	£12.99	Aspen

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pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Midlands						
VossNet	(01753) 737 800	info@vossnet.co.uk	www.vossnet.co.uk	9.00-19.00 Mon-Fri/10.00-15.00 Sat	£11.75*	Cable Internet/ISPC
X Stream	(0870) 730 6466	info@x-stream.com	http://x-stream.com	24 hours a day	n/a	Colt Internet
North East						
Brunel Internet	(01922) 598 90	sales@brunel.co.uk	www.brunel.co.uk	9.00-18.00 every day	£15*	BTnet
Discovery	(01203) 364 400	invent@discover.co.uk	www.discover.co.uk	8.30-17.00 Mon-Fri	£11.75*	Technocom
EMNET	(0115) 956 8260	enquiries@emnet.co.uk	www.emnet.co.uk/	8.30-18.00 Mon-Fri	£7.82*	NTL Internet
Fenetre	(01538) 398 298	sales@fenetre.co.uk	www.fenetre.co.uk	9.00-17.30 Mon-Fri	£9.40*	BTnet
GMTnet	(01509) 269 999	sales@gmtnet.co.uk	www.gmtnet.co.uk	9.00-17.30 Mon-Fri	£11.75*	BTnet
Griffin Internet	(01332) 606 160	info@griffin.co.uk	www.griffin.co.uk	9.00-18.00 Mon-Fri	£14.69*	GX Networks
Newgate Communications	(0121) 327 6633	marketing@newgate.co.uk	www.newgate.co.uk.	9.00-17.30 Mon-Fri	£12.50*	Easynet
Northants Computer Centre	(01604) 22539	tony@nccnet.co.uk	www.nccnet.co.uk	9.00-21.00 every day	£11.75*	Cable Internet / ISPC
Prima.net	(0115) 913 3372	sales@prima.net	www.prima.net	9.00-17.30 Mon-Fri	£11.74*	Cable Internet
Skynet Internet Services	(01604) 452 245	sales@skynet.co.uk	www.skynet.co.uk	9.00-19.00 Mon-Fri / 9.00-17.00 Sat	£11.75*	Cable Internet / ISPC
Stayfree Internet	(0116) 291 0909	sales@stayfree.co.uk	www.stayfree.co.uk	24 hours a day	£5	Wisper
The Internet in Nottingham	(0115) 956 2222	info@innotts.co.uk	www.innotts.co.uk	10.00-17.30 Mon-Fri	£14.69*	Aladdin
The Web Factory (Birmingham)	(0121) 628 6000	sales@webbirmingham.co.uk	www.webbirmingham.co.uk	9.00-17.00 Mon-Fri	from £12.50	The Web Factory
The Web Factory (Derby)	(01332) 733 233	sales@webderby.co.uk	www.webderby.co.uk	9.00-17.00 Mon-Fri	from £12.50	The Web Factory
WebLeicester	(0116) 223 0070	nick@webleicester.co.uk	www.webleicester.co.uk	9.00-17.00 Mon-Fri	from £12.50	The Web Factory
WyeNet	(01989) 762 476	sales@wyenet.co.uk	www.wyenet.co.uk	9.00-21.00 every day	£12	Cable Internet / ISPC
North East						
FirstNet Services	(0113) 294 4224	sales@firstnet.co.uk	www.firstnet.co.uk	9.00-21.00 Mon-Sat	£12.50*	Energis
Legend Internet	(01274) 743 500	sales@legend.co.uk	www.legend.co.uk	8.00-20.00 Mon-Sat	£12.50	Sprint
NetBytes Internet	(0113) 294 4273	info@netbytes.yks.com	www.netbytes.yks.com	10.00-20.00 Mon-Fri	£7.50	Sprint
North West						
Chester Internet	(01244) 341 418	sales@chesternet.co.uk	www.chesternet.co.uk	9.00-17.30 Mon-Fri	£11.75*	GX Networks
Cybase	(0151) 227 4244	sales@cybase.co.uk	www.cybase.co.uk	9.00-17.00 Mon-Fri	£11.75*	Cable Internet/ISPC
Freeway Internet	(01204) 431 313	sales@freeway.co.uk	www.freeway.co.uk	24 hours a day	£12.95*	Wisper
Kencomp Internet	(01539) 722 559	sales@kencomp.net	www.kencomp.net	9.00-17.30 Mon-Fri/10.00-16.30 Sat	£11.75*	Aspen
Lakesnet	(01539) 731 000	info@lakesnet.co.uk	www.lakesnet.co.uk	9.00-17.30 Mon-Sat	£15	Planet Online
Mersinet	(0151) 475 4751	info@mersinet.co.uk	www.mersinet.co.uk	24 hours a day	£11.75*	Wisper
North-West Net	(0161) 950 7777	sales@nwnet.co.uk	www.nwnet.co.uk	9.00-21.00 Mon-Sat	£10*	Cable Internet/ISPC
RapidNet	(0151) 722 0304	sales@rapid.net.uk	www.rapid.net.uk	9.00-17.30 Mon-Fri	£12*	Cable Internet
Talk 101	(01925) 245 145	sales@mail.talk-101.com	www.talk-101.com	9.00-17.00 Mon-Fri	£11.75*	Wisper
The Internet Shop	(01253) 763 333	black-admin@blackpool.net	www.blackpool.net	9.00-18.00 Mon-Fri	£11.75*	Aspen
Zen Internet	(01706) 713 714	sales@zen.co.uk	www.zen.co.uk	9.00-20.00 Mon-Fri/10.00-17.00 Sat-Sun	£11.75*	BTnet
Scotland						
Ednet	(0131) 466 7003	info@ednet.co.uk	www.ednet.co.uk	9.00-18.00 Mon-Fri	£11.75*	Wisper
Foremost Training	(0141) 566 6377	sales@scotnet.co.uk	www.scotnet.co.uk	8.00-17.30 Mon-Fri	£11.75*	Wisper
The Web Factory (Scotland)	(0141) 418 0880	sales@webscotland.co.uk	www.webscotland.co.uk	9.00-17.00 Mon-Fri	from £12.50	The Web Factory
TweedNet	(01573) 229 933	mike@scotborders.co.uk	www.scotborders.co.uk	24 hours a day	£17.63*	Scottish Telecom
South Central						
Andover On-line	(01264) 334 822	info@andover.co.uk	www.andover.co.uk	9.00-18.00 Mon-Fri/9.00-17.30 Sat-Sun	£12*	GX Networks
Athene Internet	(01329) 828 000	jdyer@athene.co.uk	www.athene.co.uk	8.30-18.00 Mon-Sat	£13.50*	Wisper
Bournemouth Internet	(01202) 292 900	office@bournemouth-net.co.uk	www.bournemouth-net.co.uk	9.00-17.00 Mon-Sat	£30* pq	Aladdin
CintraNet	(01703) 571 000	accounts@cintranet.co.uk	www.cintranet.co.uk	9.00-17.00 Mon-Fri	£11.75*	Cable Internet/ISPC
Dart Net	(01794) 511 505	sales@dartnet.co.uk	www.dartnet.co.uk	9.00-17.30 every day	£10*	BTnet
Interalpha	(01703) 363 200	enquiry@interalpha.co.uk	www.interalpha.net	11.30-midnight every day	£15*	Aladdin
LDS Technology	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	9.00-17.00 every day	£14.99*	BTnet
Paradise Network Services	(01256) 414 863	sales@pins.co.uk	www.pins.co.uk	11.00-19.00 Mon-Fri	£9.40*	INS
Supernet	(01534) 880 044	admin@itl.net	www.itl.net	24 hours a day	£14	PSInet
Total Connectivity Providers	(01703) 571 300	sales@tcp.co.uk	www.tcp.co.uk	9.00-18.00 Mon-Fri	£9.99*	VBC/Wisper
South West						
Aspen Internet	(01672) 511 388	admin@aspen-internet.net	www.aspen-internet.uk	8.30-19.00 Mon-Fri/9.00-18.00 Sat-Sun	£10*	VBCnet/Aladdin/Wisper
City Netgates	(0117) 907 4000	info@netgates.co.uk	www.netgates.co.uk	8.00-18.00 Mon-Fri	from £9.79	Wisper
Dataday Computers	(01793) 512 074	sw-1@cccp.net	www.dataday.co.uk	9.30-17.00 Mon-Fri	£14.10*	Aspen
Dorset Internet	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	9.00-17.30 Mon-Fri	£14.99	UUNET/BTnet
Eclipse Networking	(01392) 202 345	eclipse@eclipse.co.uk	www.eclipse.co.uk	9.00-18.00 Mon-Fri	£9.40*	Cable Internet/ISPC
Gifford Internet Services	(0117) 939 7722	admin@gifford.co.uk	www.gifford.co.uk	11.00-21.00 Mon-Fri/12.00-20.00 Sat-Sun	£8.50	VBCnet
I-Way Swindon	(01666) 860 100	sales@swindon.i-way.net.uk	www.i-way.net.uk/swindon	8.00-18.30 Mon-Fri	£11.75*	VBCnet/UUNET/PSInet
Surfers Paradise	(01635) 569 123	brian@surfersparadise.net	www.surfersparadise.net	9.00-17.00 Mon-Fri	£12	Aspen
SWIS	(01752) 228 700	swis@swis.co.uk	www.swis.net	9.00-17.00 Mon-Fri	£15	GX Networks
Taunton Cyber	(01823) 353 771	info@abling.co.uk	www.taunton-cyber.co.uk	9.00-17.00 Mon-Fri	£9.95*	BTnet
The Web Factory (Wessex)	(01793) 527 725	sales@webwessex.co.uk	www.webwessex.co.uk	9.00-17.00 Mon-Fri	from £12.50	The Web Factory
West Dorset Internet	(01305) 871 543	tim@wdi.co.uk	www.wdi.co.uk	9.00-17.00 Mon-Fri	£15	BTnet
WSS Internet Access	(01793) 420 764	info@WSkiSoft.co.uk	www.WSkiSoft.co.uk	24 hours a day	£9.99*	UUNET
Wales						
Connect Wales Internet	(01994) 230 330	sales@connect-wales.co.uk	www.connect-wales.co.uk	8.00-18.00 Mon-Fri	£11.75*	Cymru Net
Cyberstop Interent Services	(01792) 465 050	internet@cyberstop.co.uk	www.cyberstop.net	9.00-17.00 Mon-Sat	£12	Aspen
Telecall	(0117) 941 4141	sales@telecall.co.uk	www.telecall.co.uk	10.15-17.30 Mon-Fri	£11.75*	BTnet/Wisper
Vapro	(01792) 775 511	vapro.sales@vapro.net	www.vapro.net	24 hours a day	£10.56*	Aspen

internet magazine

Coming next month...

Out on the newsstands 24 June

The Internet for free

Free access to the Net, free email accounts, free Web space ... they're all there for the asking. Find out if the free deals are all they're cracked up to be.

Building the Net

The growth of the Internet depends on an unsung collection of standards pioneers and developers. We reveal the key players who are building the Net of the future.

Digital TV

As the media moguls struggle to grasp the impact of the Internet, we show you where the smart money is being invested.

Getting your images online

Need to get photos onto your Web site? Want to know the best way to sqash graphics file sizes? You'll find all the answers in our guide to using images on your site.

Plus Hot Downloads – all the free software you need and where to get it. And June's top Web sites...

Who to contact....

Hot news stories
mikebr@internet.emap.com

Information on new sites
paulb@internet.emap.com

New Net product details
richardb@internet.emap.com

Bizarre site stories
smiley@internet.emap.com

Products for our cover CD
davidp@internet.emap.com

Questions for our Expert Help section
faq@internet.emap.com

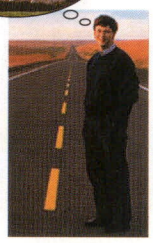
NEXT MONTH FREE BOOK! Net FAQs Answers all your Web questions

Email your submissions to smiley@internet.emap.com

The News of the Strange

Do or die

Just for a change, Mrs Gates' little boy has been in the headlines again this month. Adam Quinn of Illinois has been charged with sending letters threatening to kill the Microsoft head honcho unless he coughed up $5 million. Irony is, that's about what he makes while cleaning his teeth of a morning, and some people would do it for free anyway.



Place your bets

On the other hand, the loathed one's gargantuan bank balance is set to swell, with his follow-up to The Road Ahead currently being touted around US publishing houses. Rumours of the size of his advance are enough to make even Martin Amis grind his pristine new gnashers with envy. Still, he could try a quick flutter to recoup his losses. William Hill is currently offering odds of 100-1 that Gates will be President by 2003.

Say what you mean

Over in Silicon Valley, lexicographers have been getting an ear-bashing because they refused to change the definition of 'geek'. Despite two decades of association with programmer chic, resistance to adapting the listing from 'a performer of grotesque or depraved acts in a carnival' continues to bug their code.

Blair@spin.com

The *Evening Standard* informs us 'BLAIR TO GO LIVE ON THE NET'. Perhaps the Grinning One, not content with the size of Number 11, is moving into the larger surroundings offered by cyberspace.

Bimbo power

Finally this month, Smiley has been getting very hot under the collar about the prospect of Liz Hurley swapping the silver foil catsuit from Austin Powers for Lara Croft's kick-ass finery in the forthcoming live action version of Tomb Raider. As Hugh can will no doubt testify, la belle Hurley in live action goes down a treat.

The Smiley guide to Internet users

No 2. The Demon user

Age: Lost count, going on prehistoric. Been around since the very start, man.
Appearance: Teletubby Tinky Winky running for a bus. Portly, facial hair, mauve shirts, green pens... "Yessiree, those Demon girls sure are lookers."
Hang outs: Doing the hours at Stalag Gateway. Talking connectivity over pints of real ale in Finchley taverns. Chanting the mantra to a picture of their leader: "Tenner a month, it's a bloody bargain."
Known associates: Manufacturers of pink Rollers, newsgroup users.
Likes: CIX, discussing cryptography, feeling a frisson of arousal at the sight of a command prompt.
In other words: The kind of people you actively avoid at parties.

Hates: UUNet subscribers, BT, *The Observer* newspaper, Macs.
Philosophy: Sod the network, sell it cheap.
Latest fad: Voting for the most kissable Demon employee, allowing everyone's fave Tory, Archie Norman MP, a RealVideo soap box on their site.
Not to be confused with: New Mexico's Demon Descent League, Tales from the Crypt's The Demon Knight, someone with a sense of humour.
Most likely to say: "Just off to get my copy of Demon Dispatches. Then I'm having a 2Mb line installed at home. The technical specs are fascinating. Do you know for example..."
Most unlikely to say: "Sod this for a giggle. I'm selling up and moving to Columbia with my old mucker Peter Dawe."
More from: www.demon.net

Bookmarks of the rich and famous...

Net celebs open up their browsers and share the secrets of their bookmarks with the Internet Magazine readers. This month the sci-fi author Douglas Adams bares his soul...

Douglas Adams

Photo: Jill Furmanovsky

Who he? Author of the cult sci-fi classic, The Hitchhiker's Guide to the Galaxy, and now the man behind Starship Titanic – an interactive CD-ROM game based around the maiden voyage of a technologically advanced spaceship which just happens to come crashing into your lounge.

Surfing habits? "I tend to be very practical and pragmatic in my surfing, not visiting particular sites regularly but going and looking for what I need when I need it. Still, it's hard to imagine now how I ever survived without the Net."

Net gripes "One thing I find very frustrating is the incredibly primitive means of connecting with modems. I'd like to see the telcos bringing in wide bandwidth connections for everyone."

1) Mac OS Rumours/Mac Week

www.macosrumors.com
www.macweek.com

"I'm a big Apple Mac fan so this is perfect for keeping up to date with industry news."

2) The Hollywood Reporter

www.hollywoodreporter.com

"Sometimes I'm going to a meeting with people in Hollywood and have no idea whatsoever who they are and why I'm meeting them. This really helps me out."

3) British Airways Executive Club

www2.british-airways.com/execclub.html

"I've been spending so much time on planes lately that this site is really handy for checking my air miles."

4) The Onion

www.theonion.com

"It's like a much hipper version of *Private Eye* and very well written. I think it's the best written humour I've come across on the Web."

5) The Digital Village

www.tdv.com/

"I'm very proud of the online entertainment company I co-own and the digitally-delivered entertainment projects we're currently working on."

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